ORDER NO.SIMMC0408030A3

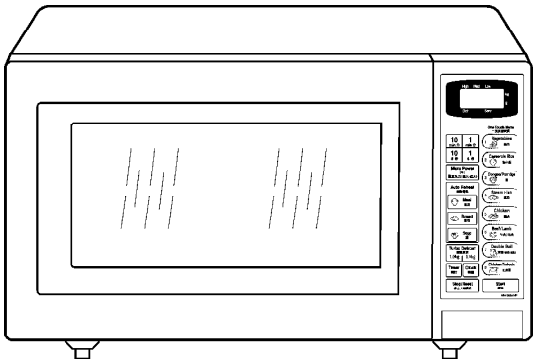
Service Manual

Microwave Oven

NN-S554MF NN-S554WF NN-K593MF / NN-K574MF NN-K574WF / NN-K544WF /

HPE(Hong Kong)
YPQ(Singapore)
MPQ(Malaysia)
TPE(Thailand, Indonesia)
LPK(Philippines)
YTE(Others)
KTE(UAE)
KUE(Egypt)
PTE(Iran)
KPQ(Kuwait, Doha, Qatar, Oman, Bahrain, Pakistan)
STM(Saudi Arabia)
ZPE(CIS Countries)

Please file and use this manual together with the service manual for Model NN-S553/K593/K573/K543 (ORDER NO. SIMMC0306022C3).



SPECIFICATIONS

Specification

Model		S554MF/WF	K593MF	K574MF/WF	K544WF
Power Source:		240V AC Single Phase, 50Hz _ _ _ _ _. For KPQ, MPQ, YPQ Models 220V AC Single Phase, 50Hz _ _ _ _ _. For KTE, ZPE, HPE, TPE, YTE,PTE Models 220V AC Single Phase, 50Hz/60Hz _ _ _ For STM Models 220V~230V AC Single Phase,60Hz _ _. For LPK Models			
Power Requirement:	Microwave	1000W	1000W	1000W	900W
	Heater	———	1350W	1350W	1150W
Output:	Microwave	1100W	1100W	1100W	1000W
	Heater	———	1300W	1300W	1100W
Microwave Frequency:		2450MHz			
Timer:		99min.90sec			
Outside Dimensions:		510mm(D) x 380mm(W) x 304mm(H)			
Oven Cavity Dimensions:		359mm(D) x 352mm(W) x 217mm(H)			
Weight:		11.5kg-12.5kg			
PbF		This product with PbF			
Specifications subject to change without notice.					

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

WARNING

1. This product should be serviced only by trained, qualified personnel.
2. Check for radiation leakage before and after every servicing according to the "procedure for measuring radiation leakage."
3. If the unit cannot be repaired on site, advise the customer not to use until unit is repaired.
4. There are special components used in the microwave oven which are important for safety. These parts are marked with a ⚠ on the replacement parts list. It is essential that these critical parts be replaced only with the manufacture's specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the orginal design.

This service manual covers products for following markets.
When troubleshooting or replacing parts, please refer to the country identifications shown below for your applicable product specification.

HPE	For Hongkong
TPE	For Thailand, Indonesia
YPQ	For Singapore
MPQ	For Malaysia
LPK	For Phillipines
YTE	For Others
ZPE	For CIS Countries
KTE	For UAE
KUE	For Egypt
PTE	For Iran
KPQ	For Kuwait, Doha, Qatar Oman, Bahrain, Pakistan
STM	For Saudi Arabia

CAUTION

About lead free solder (PbF)

Distinction of PbF PCB: PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.

Caution:
- Pb free solder has a higher melting point than standard solder; Typically the melting point is 30 - 40˚C higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 370 ± 10˚C.
- Pb free solder will tend to splash when heated too high (about 600˚C).

Panasonic®

DANGER OF HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LIVE) OF THE INVERTER POWER SUPPLY (U)

INVERTER WARNING

This Inverter board looks like a regular PCB. However, this PCB drives the magnetron tube with extremely high voltage and high current. NEW H.V.

IT HAS:

1. **Very high voltage and high current circuits.**
   It functions the same as the high voltage transformer and high voltage capacitor in ordinary microwave ovens.
2. **Aluminum heat sink that is energized with very high voltage and high heat energy**
3. **Very high voltage which may remain in circuitry even when oven is off. High voltage charge may remain in the capacitors on the board.**

DO NOT:

* 1. **Do not touch circuitry because it has very hot (high voltage) circuitry. Even when replacing board, extreme care should be taken to avoid possible electric shock hazards. High voltage charge may remain in circuits.**

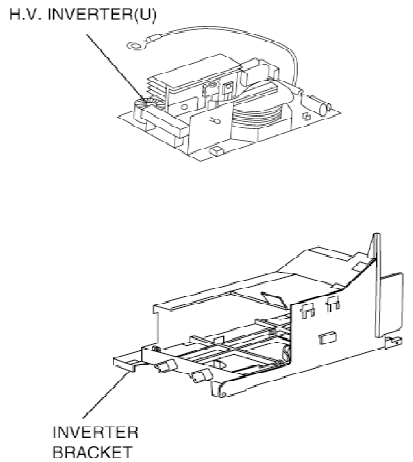
* 2. **Do not touch aluminum heat sink because it is energized with very high voltage and is also very hot in high heat energy.**

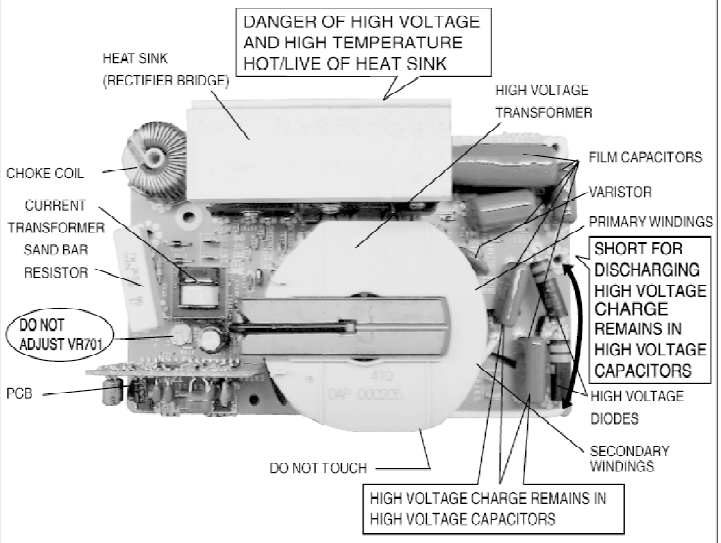
* 3. **Do not try to adjust or tamper with preset control on the Inverter board because it is very dangerous to adjust without proper test equipment.**

* 4. **Do not test oven while Inverter grounding plate or screws are loose. It is very dangerous to operate H.V. Inverter Circuit (U) with loose mounting screws or if improperly grounded.**

* 5. **Do not try to repair Inverter PCB because it is very dangerous to repair. Replace as a complete High Voltage Inverter Circuit unit.**

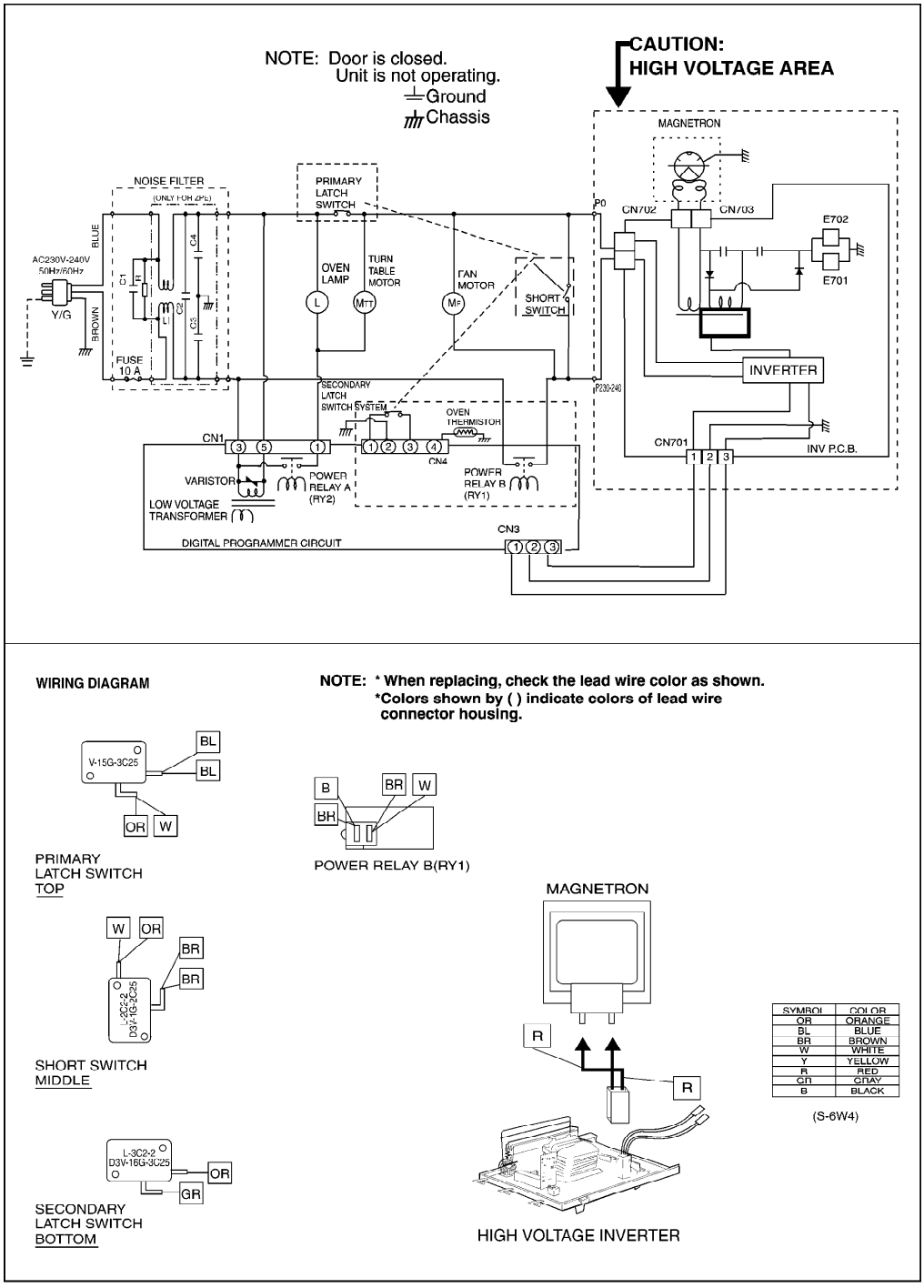
INVERTER POWER SUPPLY



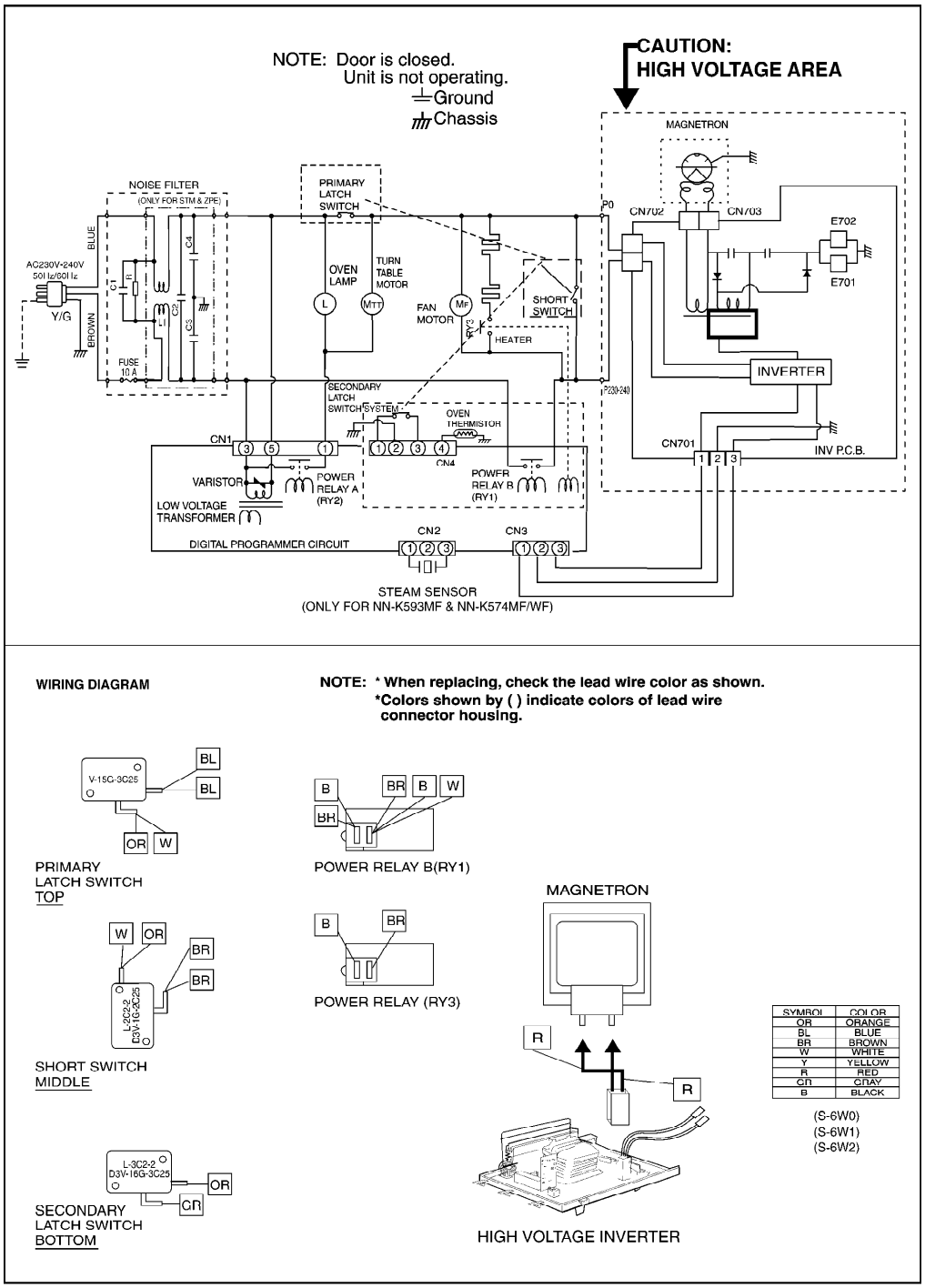


1. SCHEMATIC DIAGRAM

1.1. NN-S554MF/WF



1.2. NN-K593MF/K574/K544WF



WIRING DIAGRAM

NOTE: * When replacing, check the lead wire color as shown.
***Colors shown by ( ) indicate colors of lead wire connector housing.**

SYMBOL	COLOR
OR	ORANGE
BL	BLUE
BR	BROWN
W	WHITE
Y	YELLOW
R	RED
GR	GRAY
B	BLACK

(S-6W0)
(S-6W1)
(S-6W2)

2. CAUTIONS TO BE OBSERVED WHEN TROUBLESHOOTING

Unlike many other appliances, the microwave oven is a high voltage, high current device. It is free from danger in ordinary use, though extreme care should be taken during repair.

Caution

Servicemen should remove their watches whenever working close to or replacing the magnetron.

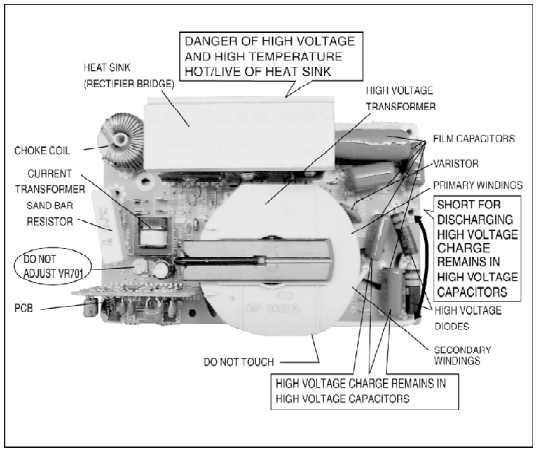
2.1. Check the grounding

Do not operate on a two wire extension cord. The microwave oven is designed to be grounded when used. It is imperative, therefore, to ensure the appliance is properly grounded before beginning repair work.

2.2. Inverter warnings

DANGER, HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LINE) OF THE INVERTER POWER SUPPLY (U)

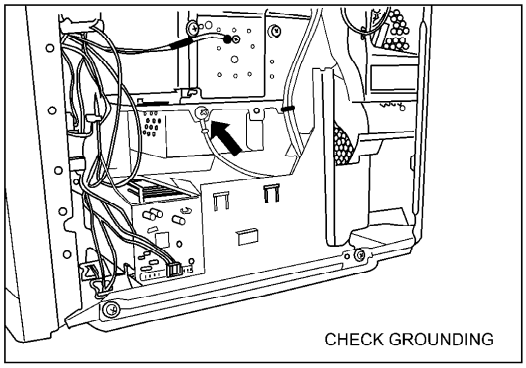
The high voltage inverter power supply handles very high voltage and current for the magnetron tube. Though it is free from danger in ordinary use, extreme care should be taken during repair.
The aluminum heat sink is also energized with high voltage (HOT), do not touch when the AC input terminals are energized. The power device Collector is directly connected to the aluminum heat sink.
The aluminum heat sink may be HOT due to heat energy, therefore, extreme care should be taken during servicing.



H.V. Inverter warning

WARNING FOR INVERTER POWER SUPPLY (U) GROUNDING

Check the high voltage inverter power supply circuit grounding. The high voltage inverter power supply circuit board must have a proper chassis ground. The inverter grounding bracket must be connected to the chassis. If the inverter board is not grounded it will expose the user to very high voltages and cause extreme DANGER! Be sure that the inverter circuit is properly grounded via the inverter earth bracket.

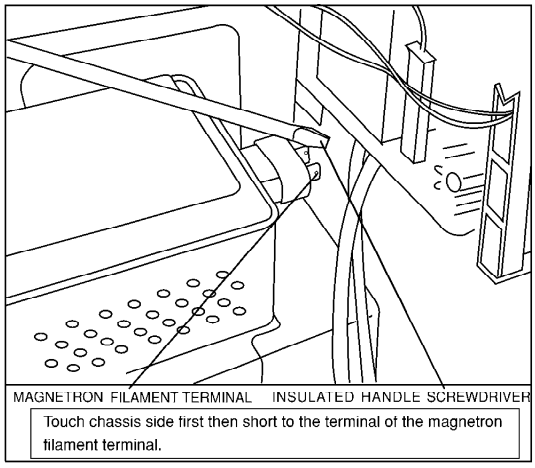


Grounding of the inverter circuit board

WARNING! DISCHARGE THE HIGH VOLATGE CAPACITORS

For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitors in the inverter power supply circuit board.

When replacing or checking parts, remove the power plug from the outlet and short the inverter output terminal of the magnetron filament terminals to the chassis ground with an insulated handle screwdriver to discharge. Please be sure to touch the chassis ground side first and then short to the output terminals.


MAGNETRON FILAMENT TERMINAL
INSULATED HANDLE SCREWDRIVER
Touch chassis side first then short to the terminal of the magnetron filament terminal.

Discharging the high voltage capacitors

WARNING

There is high voltage present with high current capabilities in the circuits of the primary and secondary windings, choke coil and heat sink of the inverter. It is extremely dangerous to work on or near these circuits with the oven energized. DO NOT measure the voltage in the high voltage circuit including the filament voltage of the magnetron.

WARNING

Never touch any circuit wiring with your hand or with an insulated tool during operation.

2.3. Part replacement.

When any part or component is to be replaced, always ensure that the power cord is removed from the wall outlet.

2.4. When the 10A fuse is blown due to the operation of the short switch:

WARNING

When the 10A 250V fuse is blown due to the operation of the interlock monitor switch, replace all of the components (primary latch switch, secondary latch switch, short switch and power relay B (RY1)).

1. **This is mandatory. Refer to “adjustments and measurements” for the location of these switches.**
2. **When replacing the fuse, confirm that it has the appropriate rating for these models.**
3. **When replacing faulty switches, be sure the mounting tabs are not bent, broken or deficient in their ability to hold the switches.**

2.5. Avoid inserting nails, wire etc. through any holes in the unit during operation.

Never insert a wire, nail or any other metal object through the lamp holes on the cavity or any holes or gaps, because such objects may work as an antenna and cause microwave leakage.

2.6. Confirm after repair

1. **After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose nor missing. Microwaves might leak if screws are not properly tightened.**
2. **Make sure that all electrical connections are tight before inserting the plug into the wall outlet.**
3. **Check for microwave energy leakage. (Refer to procedure for measuring microwave energy leakage).**

CAUTION MICROWAVE RADIATION

USE CAUTION NOT TO BECOME EXPOSED TO RADIATION FROM THE MICROWAVE MAGNETRON OR OTHER PARTS CONDUCTING MICROWAVE ENERGY

IMPORTANT NOTICE

The following components have potentials above 2000V while the appliance is operated.

- Magnetron
- High voltage transformer (Located on inverter (U))
- High voltage diodes (Located on inverter (U))
- High voltage capacitors (Located on inverter (U))

Pay special attention to these areas.

When the appliance is operated with the door hinges or magnetron installed incorrectly, the microwave leakage can exceed more than 5mW/cm$_2$. After repair or exchange, it is very important to check if the magnetron and the door hinges are correctly installed.

2.7. Sharp edges

Caution

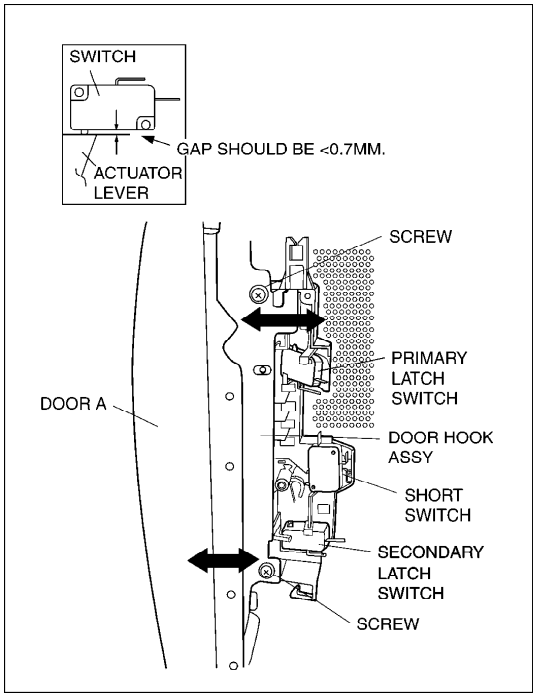
Please use caution when unpacking, installing or moving the unit, as some exposed edges may be sharp to the touch and cause injury if not handled with care.

3. MEASUREMENTS AND ADJUSTMENTS

3.1. Adjustment of primary latch switch, secondary latch switch and short switch.

1. **Mount the Primary latch switch, the Secondary latch switch and the Short switch to the door hook assembly as shown in ILL.**
   NOTE:
   No specific individual adjustments during installation of the Primary latch switch, Secondary latch switch or Short switch to the door hook are required.
2. **When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of the arrows in the illustration, so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.**
3. **Reconnect the short switch and check the continuity of the monitor circuit and all latch switches again by following the**

component test procedures.



3.2. Measurement of microwave output

The output power of the magnetron can be determined by performing IEC standard test procedures. However,due to the complexity of IEC test procedures, it is recommended to test the magnetron using the simple method outlined below.

Necessary Equipment:

***1 liter beaker *Glass thermometer / *Wrist watch or stopwatch**

NOTE:

Check the line voltage under load.Low voltage will lower the magnetron output. Take the temperature readings and heating time as accurately as possible.

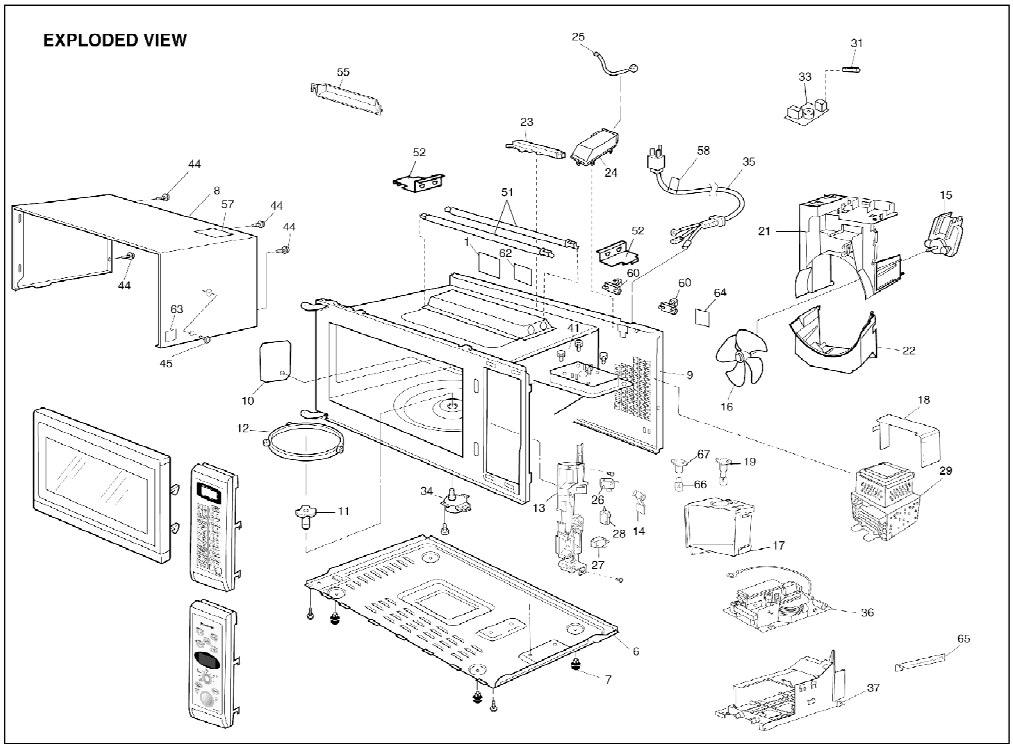
1. **Fill the beaker with exactly one liter of tap water.Stir the water using the thermometer and record the water's temperature. (recorded as T1).**
2. **Place the beaker on the center of glass tray. / Set the oven for High power and heat it for exactly one minute.**
3. **Stir the water again and read the temperature of the water. (recorded as T2).**
4. **The normal temperature rise at High power level for each model, is as shown in table.**

TABLE (1L-1min.test)

RATED OUTPUT	TEMPERATURE RISE
1000W	Min.8.6°C
1100W	Min.9.4°C

4. EXPLODED VIEW AND PARTS LIST

4.1. EXPLODED VIEW



4.2. PARTS LIST

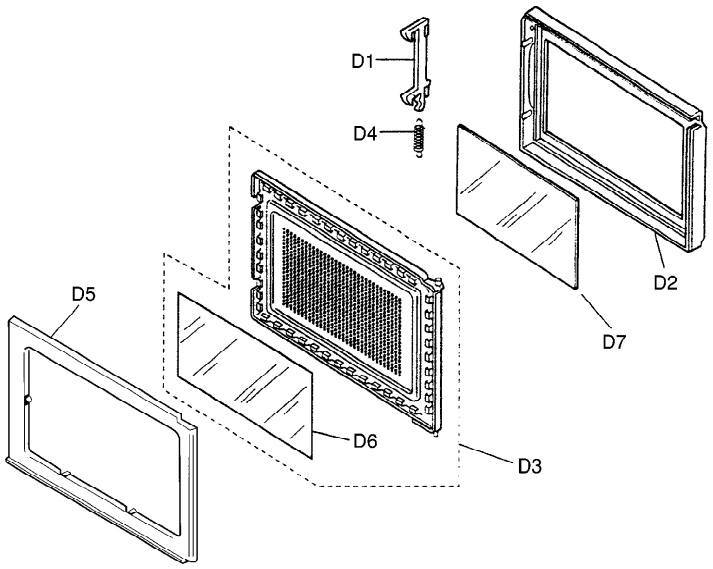
NOTE:

1. **When ordering replacement part(s), please use part number(s) shown in this part list.**
   Do not use description of the part.
2. **Important safety notice:**
   Components identified by ⚠ mark have special characteristics important for safety.
   When replacing any of these components, use only manufacture's specified parts.

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
1		F00066V00HP	CAUTION LABEL	1	EXCEPT ZPE
1		F00066W10ZP	CAUTION LABEL	1	ZPE
6		F10015Q00AP	BASE	1	
7		F10084T00AP	RUBBER FOOT	4	
8		F110D5R00SAP	CABINET BODY	1	K593MF,K574MF
8		F110D5R00HAP	CABINET BODY	1	K574WF,K544WF
8		F110D5Q00SAP	CABINET BODY	1	S554MF
8		F110D5Q00HAP	CABINET BODY	1	S554WF
9	⚠	F200A5R50CP	OVEN	1	K593MF,K574MF/WF
9	⚠	F200A5R20BP	OVEN	1	K544WF
9	⚠	F200A5Q30BP	OVEN	1	S554MF/WF
10		F20555Q00BP	COVER	1	
11		F21315G10XN	PULLY SHAFT	1	
12		F290D5Q00AP	ROLLER RING (U)	1	
13	⚠	F30205Q00AP	DOOR HOOK	1	
14		F31365Q00AP	HOOK LEVER A	1	
15		F400A5U00XN	FAN MOTOR	1	
16		F40085G10XN	FAN BLADE	1	
17		F40255Q00AP	AIR GUIDE A	1	
18		F40425Q00AP	AIR GUIDE F	1	
19		F612E5G10XN	INCANDESCENT LAMP(U)	1	EXCEPT HPE
21		F41445Q00AP	UPPER ORIFICE	1	
22		F42095Q00AP	LOWER ORIFICE	1	
23		F64505Q00AP	SENSOR COVER B	1	K593MF,K574MF/WF
24		F65434W00AP	SENSOR COVER C	1	K593MF,K574MF/WF
25		A607S4T00AP	STEAM SENSOR	1	K593MF,K574MF/WF
26	⚠	J61424T00AP	MICRO SWITCH	1	(PRIMARY LATCH SWITCH) (V-15G-3C25)
27	⚠	J61414T00AP	MICRO SWITCH	1	(SECONDARY LATCH SWITCH) (D3V-16G-3C25)
28	⚠	J61784T00AP	MICRO SWITCH	1	(SHORT SWITCH) (D3V-1G-2C25)
29	⚠	2M261-M32F	MAGNETRON	1	EXCEPT STM,ZPE
29	⚠	2M261-M32J	MAGNETRON	1	STM,ZPE
31	⚠	A62304210BP	FUSE	1	(10A)
33		J692Y4T00YNR	NOISE FILTER (U)	1	EXCEPT STM,ZPE
33		J607X4L00BP	NOISE FILTER (U)	1	STM,ZPE
34		F63265U30XN	TURNTABLE MOTOR	1	
35	⚠	F900C5Q00YK	AC CORD W/PLUG	1	HPE,MPQ,YTE,YPQ,KTE,KPQ,KUE
35	⚠	F900C5G40SN	AC CORD W/PLUG	1	STM
35	⚠	F900C5Q00TN	AC CORD W/PLUG	1	TPE,PTE,ZPE
35	⚠	F900C5Q00LN	AC CORD W/PLUG	1	LPK
36		F606Y4V00XN	H.V.INVERTER (U)	1	
37		F65855R00BP	INVERTER BRACKET	1	
41		XTWFA4+12T	SCREW	4	FOR MAGNETRON
44		XTWFA4+12D	SCREW	4	FOR CABINET BODY
45		XTCAFA4+ 12AFW	SCREW	1	FOR CABINET BODY SIDE (K574WF,K544WF,S554WF)
45		XTCAFA4+ 12AFS	SCREW	1	FOR CABINET BODY SIDE (K593MF,K574MF,S554MF)
51		F630G5R20GP	HEATER (AU)	2	K593MF (KTE,PTE), / K574MF/WF (HPE,TPE,YTE,LPK,KTE,STM,ZPE)
51		F630G5R20BP	HEATER (AU)	2	K574MF/WF (MPQ,YPQ),K574WF (KPQ)
51		F630G6B80XN	HEATER (AU)	2	K544WF (KTE,KUE,HPE,TPE,YTE,ZPE,PTE)
51		F630G5R00BP	HEATER (AU)	2	K544WF (MPQ)

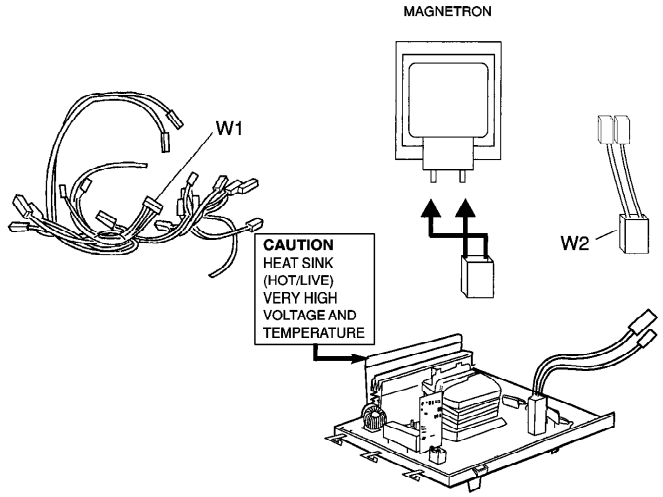
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
52		F64605R00BP	HEATER SUPPORT	2	K593MF,K574MF/WF,K544WF
55		F40245R00BP	EXHAUST GUIDE A	1	K593MF,K574MF/WF,K544WF
57		F01506W50XP	NO TOUCHING LABEL	1	K593MF,K574MF/WF,K544WF
58		F02395E20KN	CORD CAUTION LABEL	1	KTE,KPQ,STM,PTE,KUE
60		F11404J60XN	STOPPER	2	
62		F00066W10MP	CAUTION LABEL	1	YPQ
63		F02846W10YP	NO. LABEL	1	K574MF YPQ
63		F02846W40YP	NO. LABEL	1	S554MF YPQ
64		F0005-4S10	EARTH LABEL	1	TPE
65		F20345Q00CP	REINFORCE BRACKET	1	
66		F60305G60HN	INCANDESCENT LAMP	1	HPE
67		F61525H00AP	SOCKET	1	HPE

4.3. DOOR ASSEMBLY



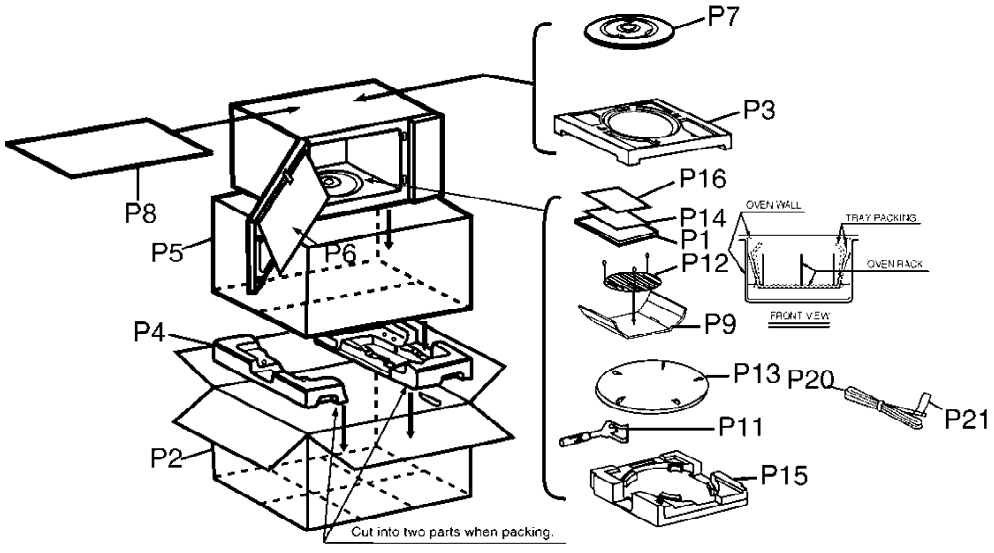
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
D1		F30185Q00AP	DOOR KEY A	1	
D2	⚠	F30015Q00SBP	DOOR A	1	K593MF,K574MF(EXCEPT LPK),S554MF
D2	⚠	F30015Q00SAP	DOOR A	1	K574MF LPK
D2	⚠	F30015Q00HBP	DOOR A	1	K574WF,K544WF,S554WF(EXCEPT LPK)
D2	⚠	F30015Q00HAP	DOOR A	1	S554WF LPK
D3	⚠	F302K5Q00AP	DOOR E(U)	1	
D4		F30215G10XN	DOOR KEY SPRING	1	
D5	⚠	F30855Q00AP	DOOR C	1	
D6		F31456V60XP	DOOR SCREEN A	1	
D7		F31465R90HP	DOOR SCREEN B	1	K593MF,K574MF/WF,K544WF
D7		F31465Q00HP	DOOR SCREEN B	1	S554MF/WF

4.4. WIRING MATERIALS



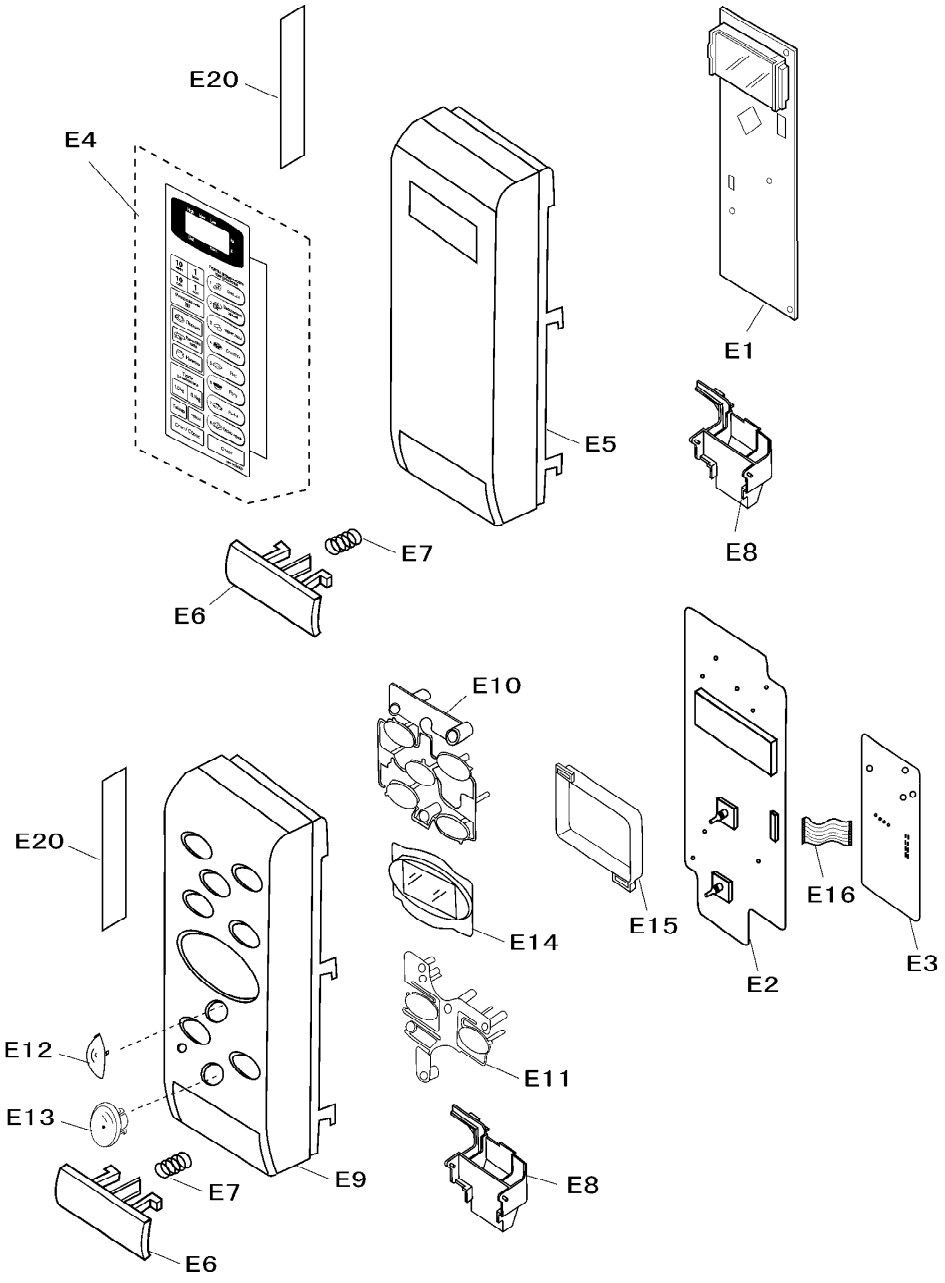
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
W1		F030A6D70XP	LEAD WIRE HARNESS	1	K593MF(KTE,PTE),K574MF/WF(EXCEPT STM & ZPE), / K544WF (EXCEPT ZPE)
W1		F030A5R30ZP	LEAD WIRE HARNESS	1	K574WF STM,K574MF ZPE,K544WF ZPE
W1		F030A6D50XP	LEAD WIRE HARNESS	1	S554MF/WF (EXCEPT ZPE)
W1		F030A5Q00BP	LEAD WIRE HARNESS	1	S554MF/WF ZPE
W2		F030E5Q00AP	H.V.LEAD WIRE	1	

4.5. PACKING AND ACCESSORIES



Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
P1		F00036W00KP	INSTRUCTION MANUAL	1	K593MF (KTE,PTE)
P1		F00036W10HP	INSTRUCTION MANUAL	1	K574MF (HPE,TPE,MPQ,YTE,LPK,YPQ)
P1		F00036W10KP	INSTRUCTION MANUAL	1	K574WF (KTE,KPQ,STM,PTE)
P1		F00036W10ZP	INSTRUCTION MANUAL	1	K574MF (ZPE)
P1		F00036W20KP	INSTRUCTION MANUAL	1	K544WF (KTE,PTE,KUE)
P1		F00036W20HP	INSTRUCTION MANUAL	1	K544WF (HPE,TPE,MPQ,YTE)
P1		F00036W20ZP	INSTRUCTION MANUAL	1	K544WF (ZPE)
P1		F00036W40HP	INSTRUCTION MANUAL	1	S554WF (HPE,TPE,YTE,MPQ,LPK),S554MF (MPQ,YPQ)
P1		F00036W40ZP	INSTRUCTION MANUAL	1	S554MF/WF (ZPE)
P2		F01026W00SKT	PACKING CASE,PAPER	1	K593MF (KTE,PTE)
P2		F01026W10SHP	PACKING CASE,PAPER	1	K574MF (HPE,TPE,MPQ,YTE,LPK,YPQ)
P2		F01026W10HKT	PACKING CASE,PAPER	1	K574WF (KTE,PTE)
P2		F01026W10HKP	PACKING CASE,PAPER	1	K574WF (KPQ,STM)
P2		F01026W10SZP	PACKING CASE,PAPER	1	K574MF (ZPE)
P2		F01026W20HHP	PACKING CASE,PAPER	1	K544WF (HPE,TPE,MPQ,YTE)
P2		F01026W20HZP	PACKING CASE,PAPER	1	K544WF (ZPE)
P2		F01026W20HKT	PACKING CASE,PAPER	1	K544WF (KTE,PTE,KUE)
P2		F01026W40HHP	PACKING CASE,PAPER	1	S554WF (HPE,TPE,YTE,MPQ,LPK)
P2		F01026W40HZP	PACKING CASE,PAPER	1	S554WF (ZPE)
P2		F01026W40SYP	PACKING CASE,PAPER	1	S554MF (MPQ,YPQ)
P2		F01026W40SZP	PACKING CASE,PAPER	1	S554MF (ZPE)
P3		F01045Q00AP	UPPER FILLER	1	
P4		F01055Q00AP	LOWER FILLER	1	
P5		F01068100XN	P.E.BAG	1	
P6		F01078100XN	DOOR SHEET	1	
P7		F06015Q00AP	COOKING TRAY	1	
P8		F01924T00AP	SHEET	1	K593MF,K574MF
P9		F01085R00BP	RACK PACKING	1	K593MF (KTE,PTE)
P9		F01085R00AP	RACK PACKING	1	K574MF/WF,K544WF
P11		F10855R00AP	PIZZA PAN HANDLE	1	K593MF (KTE,PTE)
P12		F060V5U00XN	OVEN RACK	1	K593MF,K574MF/WF,K544WF
P13		F46065R00AP	PIZZA PAN	1	K593MF (KTE,PTE)
P14		F000B6V90KP	COOKING GUIDE	1	KTE,KPQ,STM,PTE,KUE
P14		F000B6V70MP	COOKING GUIDE	1	HPE,TPE,MPQ,YTE,LPK,YPQ
P14		F000B6W10ZP	COOKING GUIDE	1	ZPE
P15		F01135R00AP	PIZZA PAN FOAM	1	K593MF (KTE,PTE)
P16		F04456W00KT	OVERLAY	1	K593MF (KTE,PTE)
P16		F04456W00PT	OVERLAY	1	K593MF (PTE)
P16		F04456W10TP	OVERLAY	1	K574MF (TPE)
P16		F04456W10MP	OVERLAY	1	K574MF (MPQ,YPQ)
P16		F04456W10KT	OVERLAY	1	K574WF (KTE,KPQ,STM,PTE)
P16		F04456W10PT	OVERLAY	1	K574WF (PTE)
P16		F04456W20TP	OVERLAY	1	K544WF (TPE)
P16		F04456W20MP	OVERLAY	1	K544WF (MPQ)
P16		F04456W20KT	OVERLAY	1	K544WF (KTE,PTE,KUE)
P16		F04456W20PT	OVERLAY	1	K544WF (PTE)
P16		F04456W20KU	OVERLAY	1	K544WF (KUE)
P16		F04456W40TP	OVERLAY	1	S554WF (TPE)
P16		F04456W40MP	OVERLAY	1	S554MF/WF (MPQ)
P20		F91644000XN	EARTH LEAD	1	TPE
P21		F00324040XN	EARTH CAUTION LABEL	1	TPE

4.6. ESCUTCHEON BASE ASSEMBLY


E20
E4
E5
E1
E8
E7
E6
E10
E20
E14
E15
E2
E16
E3
E12
E11
E13
E7
E9
E8
E6

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
E1		F603L6W10HP	D.P.CIRCUIT(AU)	1	K574MF (HPE,TPE)
E1		F603L6W10MP	D.P.CIRCUIT(AU)	1	K574MF (MPQ)
E1		F603L6W10YT	D.P.CIRCUIT(AU)	1	K574MF (YTE)
E1		F603L6W10LP	D.P.CIRCUIT(AU)	1	K574MF (LPK)
E1		F603L6W10YP	D.P.CIRCUIT(AU)	1	K574MF (YPQ)
E1		F603L6W10KT	D.P.CIRCUIT(AU)	1	K574WF (KTE,PTE)
E1		F603L6W10KP	D.P.CIRCUIT(AU)	1	K574WF (KPQ)
E1		F603L6W10ST	D.P.CIRCUIT(AU)	1	K574WF (STM)
E1		F603L6W10ZP	D.P.CIRCUIT(AU)	1	K574MF (ZPE)
E1		F603L6W20HP	D.P.CIRCUIT(AU)	1	K544WF (HPE,TPE)
E1		F603L6W20MP	D.P.CIRCUIT(AU)	1	K544WF (MPQ)
E1		F603L6W20YT	D.P.CIRCUIT(AU)	1	K544WF (YTE)
E1		F603L6W20ZP	D.P.CIRCUIT(AU)	1	K544WF (ZPE)
E1		F603L6W20KT	D.P.CIRCUIT(AU)	1	K544WF (KTE,PTE,KUE)
E1		F603L6W40HP	D.P.CIRCUIT(AU)	1	S554WF (HPE,TPE)
E1		F603L6W40MP	D.P.CIRCUIT(AU)	1	S554MF/WF (MPQ),S554MF (YPQ)
E1		F603L6W40YT	D.P.CIRCUIT(AU)	1	S554WF (YTE)
E1		F603L6W40LP	D.P.CIRCUIT(AU)	1	S554WF (LPK)
E1		F603L6W40ZP	D.P.CIRCUIT(AU)	1	S554MF/WF (ZPE)
E2		F608E5R90HP	D.P.CIRCUIT(ABU)	1	K593MF (KTE,PTE)
E3		F603Y5R90HP	D.P.CIRCUIT(DU)	1	K593MF (KTE,PTE)
E4		F630Y6W40HHP	MEMBRANE SWITCH(U)	1	S554WF (HPE,TPE,YTE,MPQ,LPK)
E4		F630Y6W40SYP	MEMBRANE SWITCH(U)	1	S554MF (MPQ,YPQ)
E4		F630Y6W40SZP	MEMBRANE SWITCH(U)	1	S554MF (ZPE)
E4		F630Y6W40HZP	MEMBRANE SWITCH(U)	1	S554WF (ZPE)
E4		F630Y6W10SHP	MEMBRANE SWITCH(U)	1	K574MF (HPE,TPE,MPQ,YTE,LPK,YPQ)
E4		F630Y6W10HKT	MEMBRANE SWITCH(U)	1	K574WF (KTE,KPQ,STM,PTE)
E4		F630Y6W10SZP	MEMBRANE SWITCH(U)	1	K574MF (ZPE)
E4		F630Y6W20HHP	MEMBRANE SWITCH(U)	1	K544WF (HPE,TPE,MPQ,YTE)
E4		F630Y6W20HKT	MEMBRANE SWITCH(U)	1	K544WF (KTE,PTE,KUE)
E4		F630Y6W20HZP	MEMBRANE SWITCH(U)	1	K544WF (ZPE)
E5		F80345Q00SBP	ESCUTCHEON BASE	1	K574MF,S554MF
E5		F80345Q00HBP	ESCUTCHEON BASE	1	K574WF,K544WF,S554WF
E6		F80725Q00SAP	DOOR OPENING BUTTON	1	K593MF,K574MF,S554MF
E6		F80725Q00HAP	DOOR OPENING BUTTON	1	K574WF,K544WF,S554WF
E7		F80375K00AP	COOK BUTTON SPRING	1	
E8		F82565Q00AP	DOOR OPENING LEVEL	1	
E9		F80345R90SHP	ESCUTCHEON BASE	1	K593MF (KTE,PTE)
E10		F80245R90SHP	BUTTON A	1	K593MF (KTE,PTE)
E11		F83875R90SHP	BUTTON B	1	K593MF (KTE,PTE)
E12		F80205Q50SEP	KNOB A	1	K593MF (KTE,PTE)
E13		F83925R80SEP	KNOB B	1	K593MF (KTE,PTE)
E14		F81895Q50HEP	DISPLAY WINDOW	1	K593MF (KTE,PTE)
E15		F80165Q50EP	DISPLAY FRAME	1	K593MF (KTE,PTE)
E16		F66165Q00EP	FLAT CABLE	1	K593MF (KTE,PTE)
E20		F00076W00KT	NAME PLATE	1	K593MF KTE
E20		F00076W00PT	NAME PLATE	1	K593MF PTE
E20		F00076W10HP	NAME PLATE	1	K574MF HPE
E20		F00076W10TP	NAME PLATE	1	K574MF TPE
E20		F00076W10MP	NAME PLATE	1	K574MF MPQ
E20		F00076W10YT	NAME PLATE	1	K574MF YTE
E20		F00076W10LP	NAME PLATE	1	K574MF LPK
E20		F00076W10YP	NAME PLATE	1	K574MF YPQ
E20		F00076W10KT	NAME PLATE	1	K574WF KTE

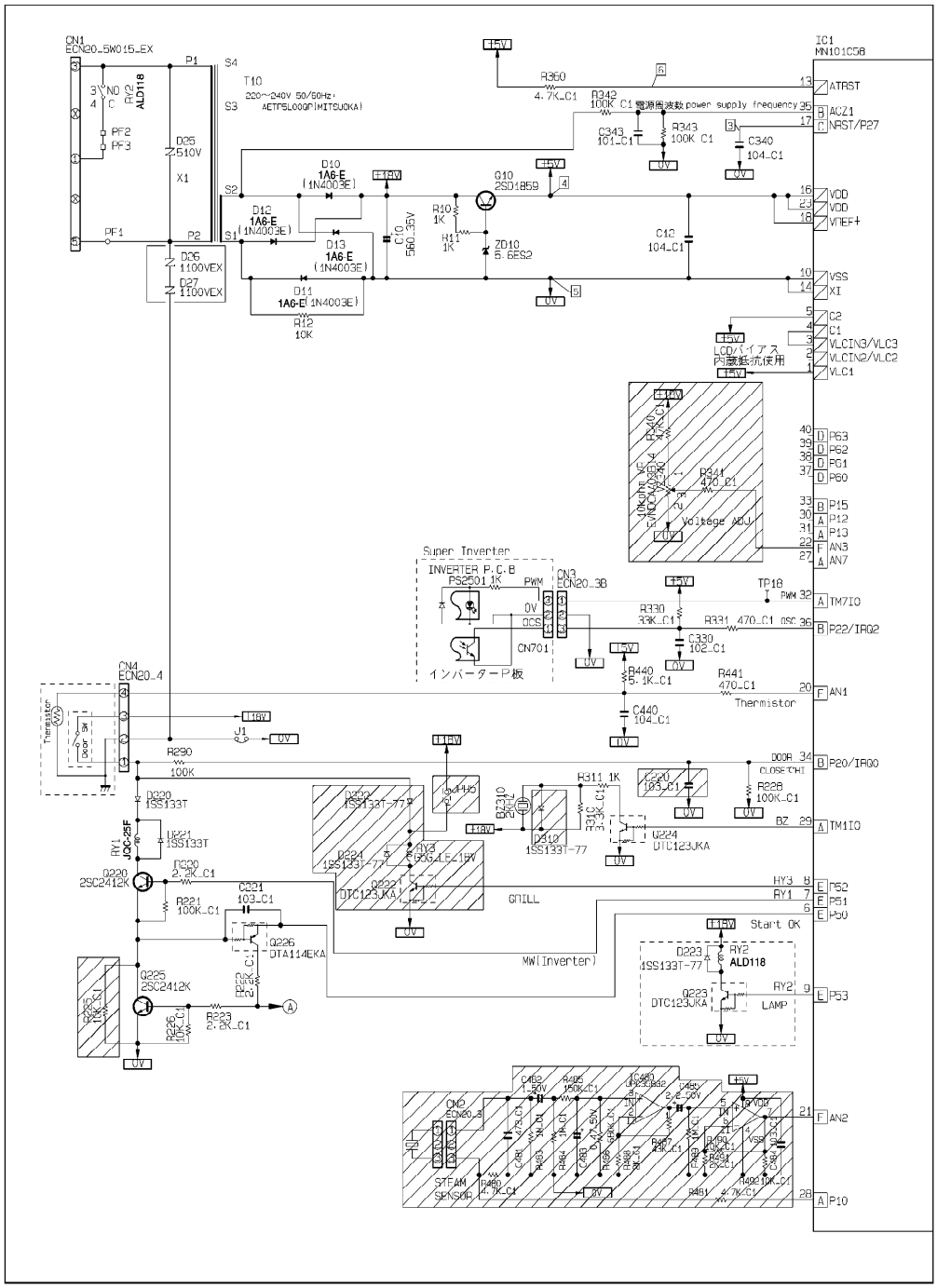
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
E20		F00076W10KP	NAME PLATE	1	K574WF KPQ
E20		F00076W10ST	NAME PLATE	1	K574WF STM
E20		F00076W10ZP	NAME PLATE	1	K574MF ZPE
E20		F00076W10PT	NAME PLATE	1	K574WF PTE
E20		F00076W20HP	NAME PLATE	1	K544WF HPE
E20		F00076W20TP	NAME PLATE	1	K544WF TPE
E20		F00076W20MP	NAME PLATE	1	K544WF MPQ
E20		F00076W20YT	NAME PLATE	1	K544WF YTE
E20		F00076W20ZP	NAME PLATE	1	K544WF ZPE
E20		F00076W20KT	NAME PLATE	1	K544WF KTE
E20		F00076W20PT	NAME PLATE	1	K544WF PTE
E20		F00076W20KU	NAME PLATE	1	K544WF KUE
E20		F00076W40HP	NAME PLATE	1	S554WF HPE
E20		F00076W40TP	NAME PLATE	1	S554WF TPE
E20		F00076W40YT	NAME PLATE	1	S554WF YTE
E20		F00076W40SYP	NAME PLATE	1	S554MF YPQ
E20		F00076W40HMP	NAME PLATE	1	S554WF MPQ
E20		F00076W40SMP	NAME PLATE	1	S554MF MPQ
E20		F00076W40LP	NAME PLATE	1	S554WF LPK
E20		F00076W40SZP	NAME PLATE	1	S554MF ZPE
E20		F00076W40HZP	NAME PLATE	1	S554WF ZPE

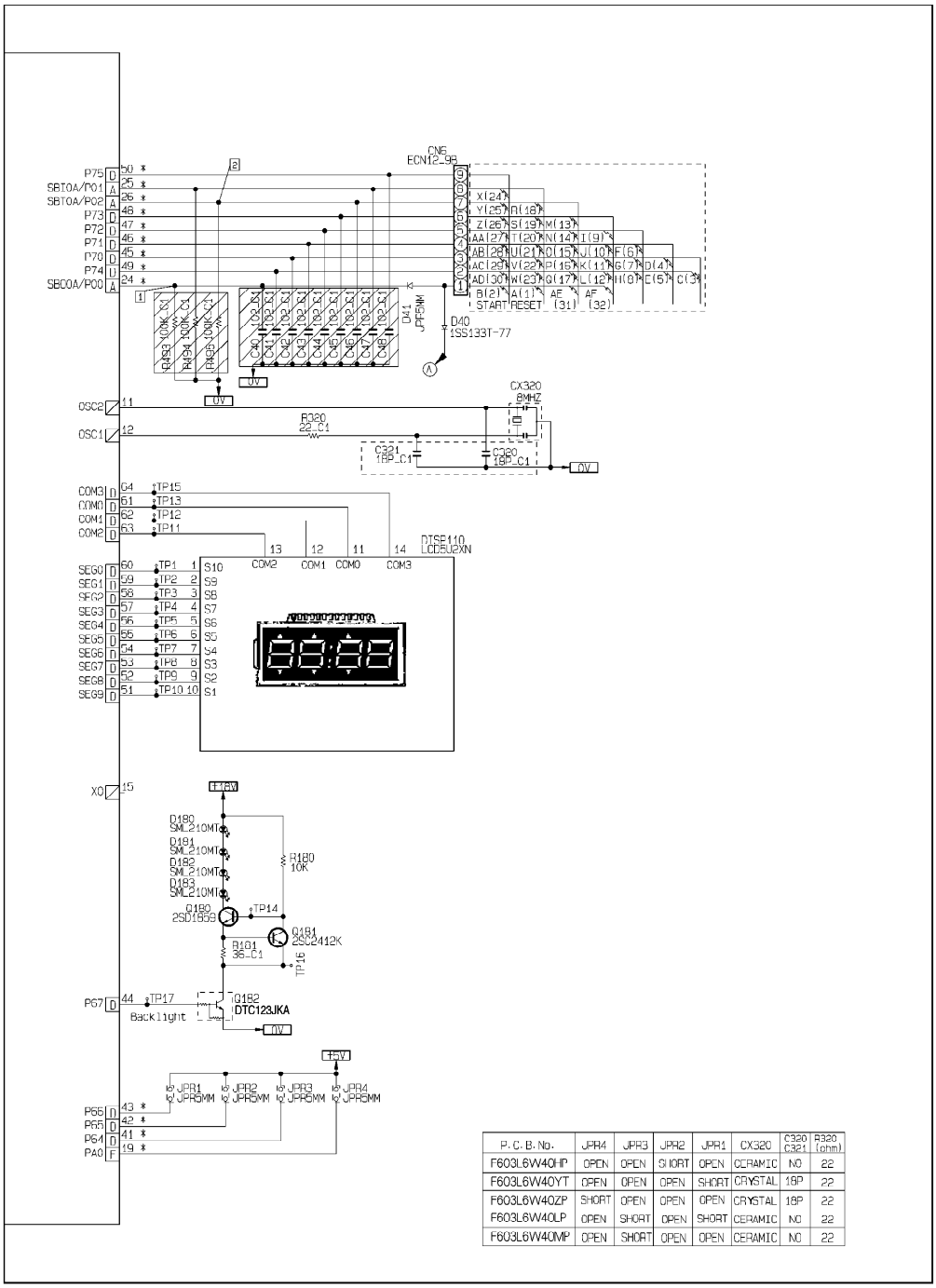
4.7. H.V. INVERTER BOARD MAIN PARTS LIST (F606Y4V00XN)

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
Q701		A691E4V10GP	TRANSISTOR SI	1	
Q702			TRANSISTOR SI	1	
DB701		AESTRS2006M	DIODE SI	1	20A,600V
D701,D702		A62024V00GP	DIODE SI	2	0.3A
C704,C705		ECWH30822JUA	CAPACITOR	2	8200PF 3000VDC
T701		F609A4V00XN	H.V. TRANSFORMER	1	
		F607D4V00XN	D.P.CIRCUIT (KU)	1	
L701		F50204V00XN	CHOKE COIL	1	
CT701		F66904V00XN	CURRENT TRANSFORMER	1	

5. DIGITAL PROGRAMMER CIRCUIT

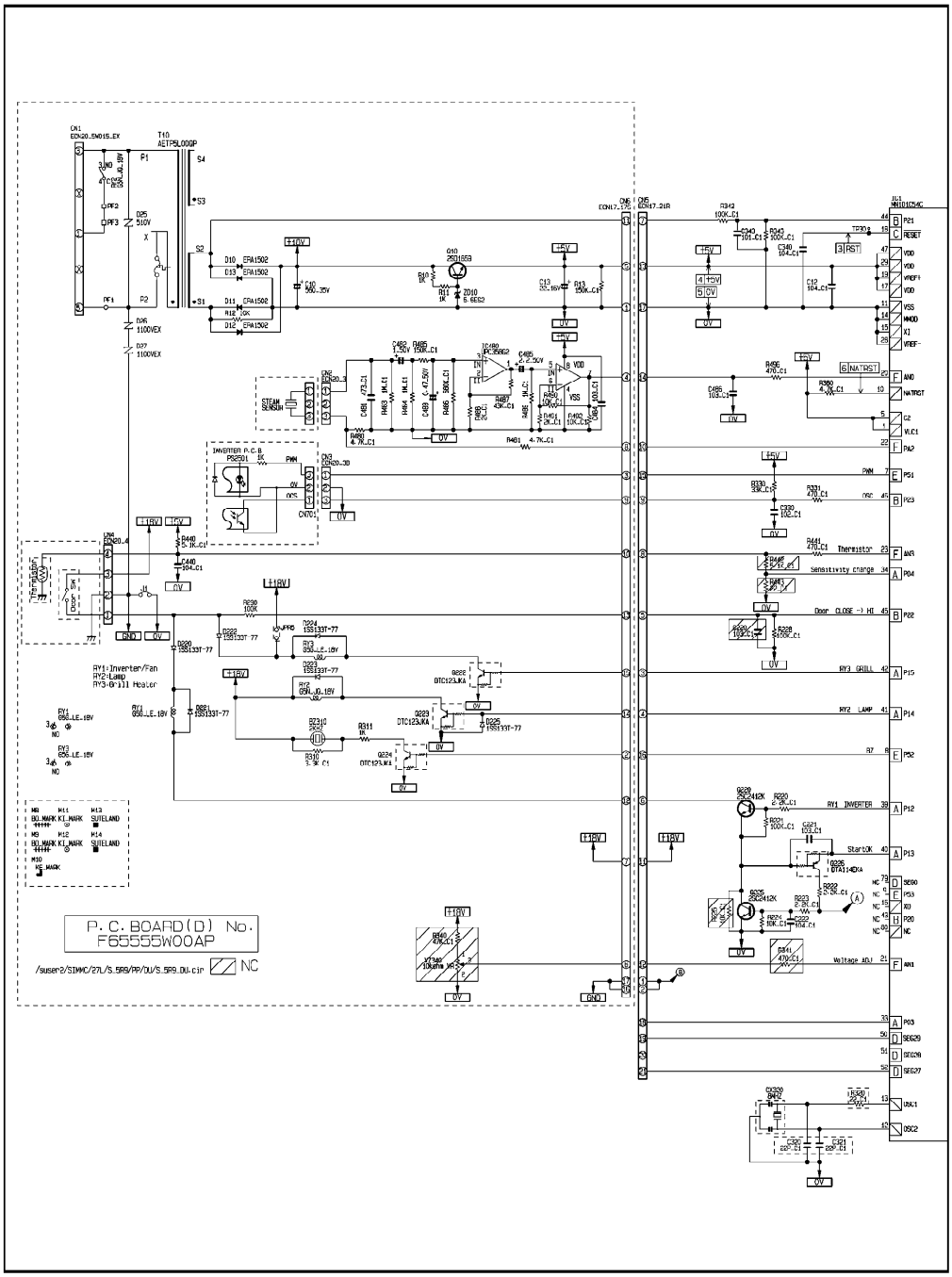
5.1. NN-S554MF/WF

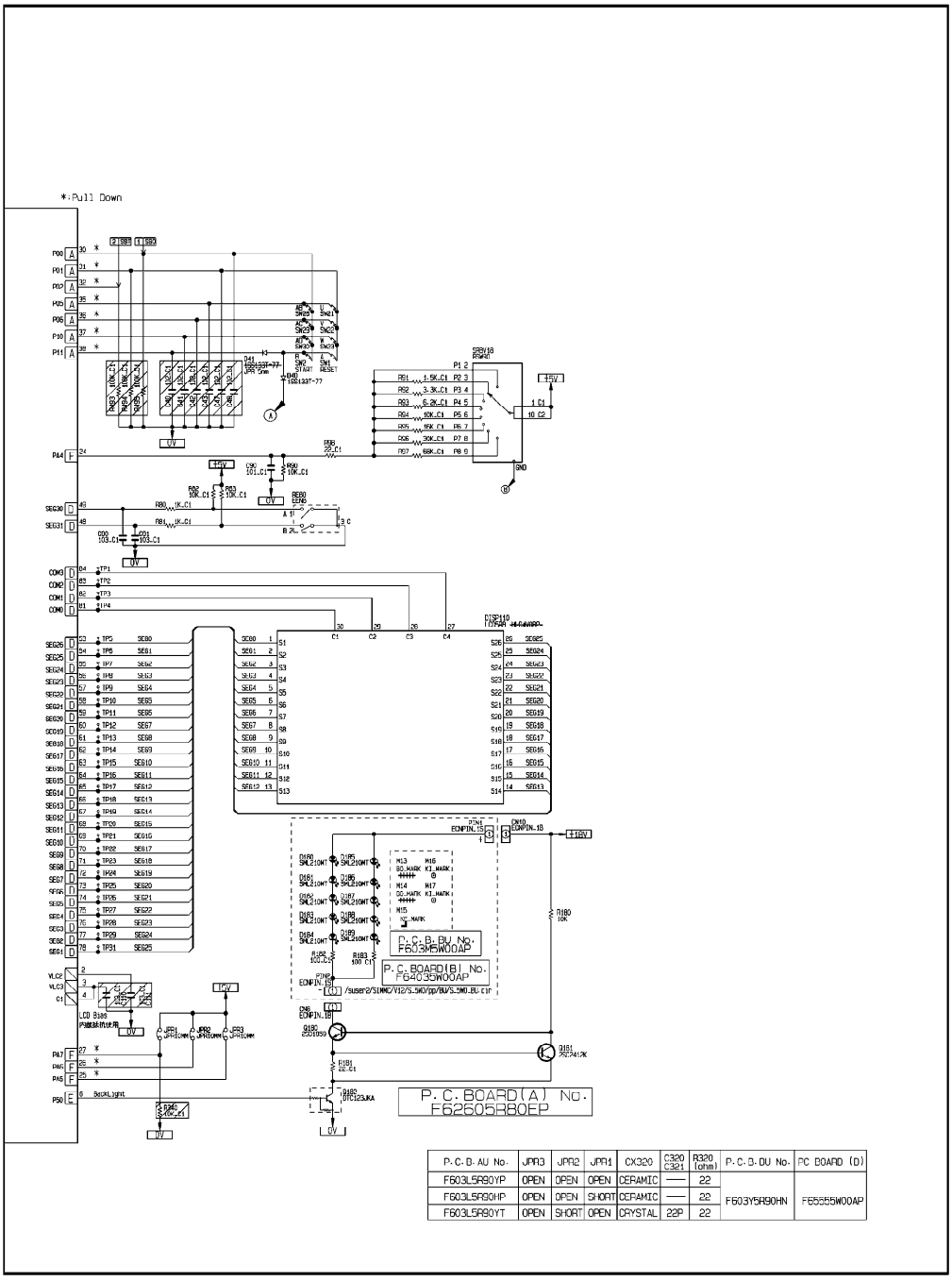

IC1
MN101C58
ATRST
ACZ1
NRST/P27
VDD
VDD
VREF+
VSS
XI
C2
C1
VLCIN3/VLC3
VLCIN2/VLC2
VLC1
P63
P62
P61
P60
P15
P12
P13
AN3
AN7
TM7IO
P22/IRQ2
AN1
P20/IRQ0
TM1IO
P52
P51
P50
P53
AN2
P10
+5V
+18V
0V
Start OK
LAMP
Thermistor
Voltage ADJ
Super Inverter
INVERTER P.C.B
インバーター P板
S7EAM SENSOR
GRILL
MW(Inverter)



P.C.B.No.	JPR4	JPR3	JPR2	JPR1	CX320	C320 C321	R320 (ohm)
F603L6W40HP	OPEN	OPEN	SHORT	OPEN	CERAMIC	NO	22
F603L6W40YT	OPEN	OPEN	OPEN	SHORT	CRYSTAL	18P	22
F603L6W40ZP	SHORT	OPEN	OPEN	OPEN	CRYSTAL	18P	22
F603L6W40LP	OPEN	SHORT	OPEN	SHORT	CERAMIC	NO	22
F603L6W40MP	OPEN	SHORT	OPEN	OPEN	CERAMIC	NO	22

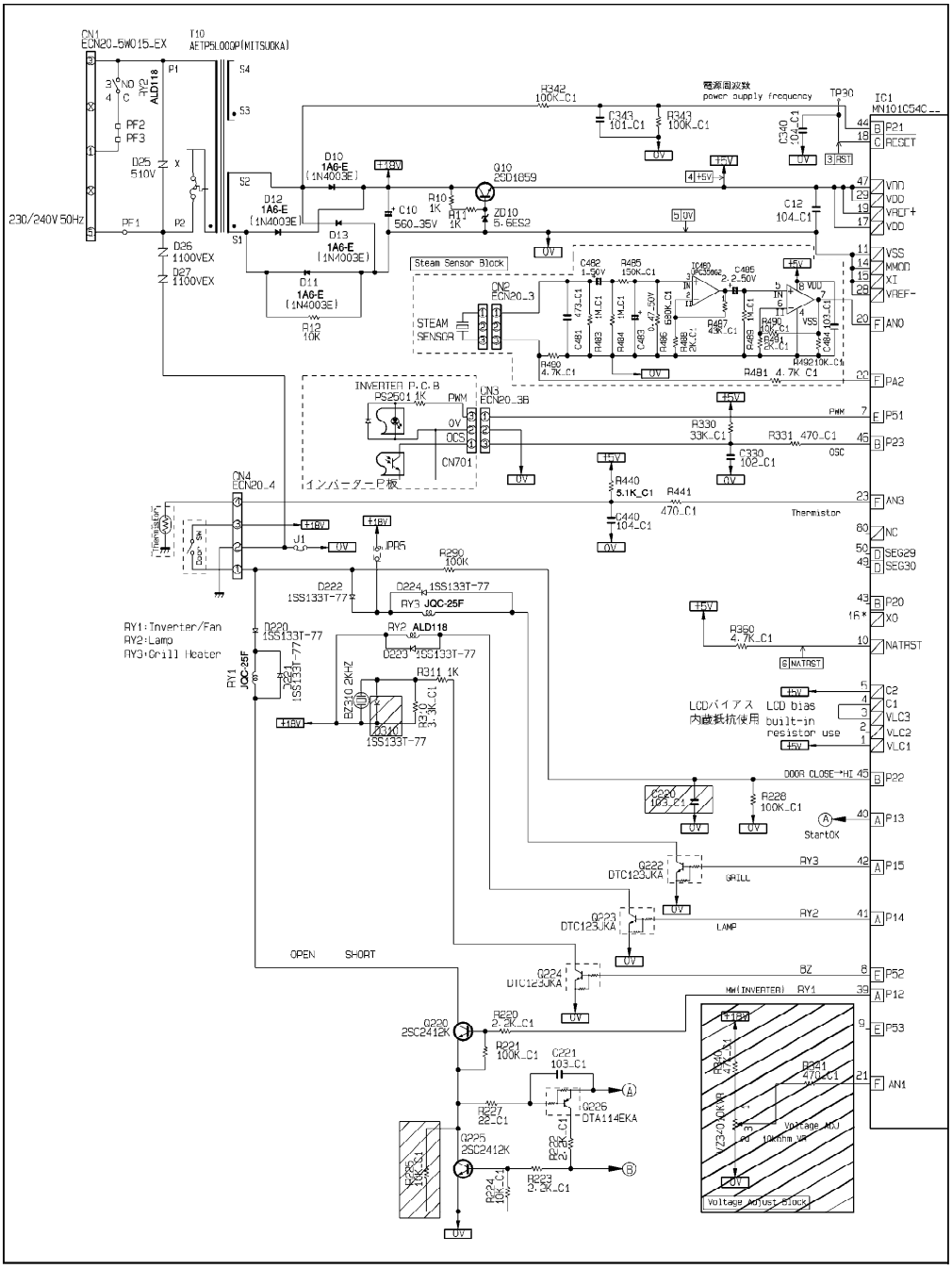
5.2. NN-K593MF

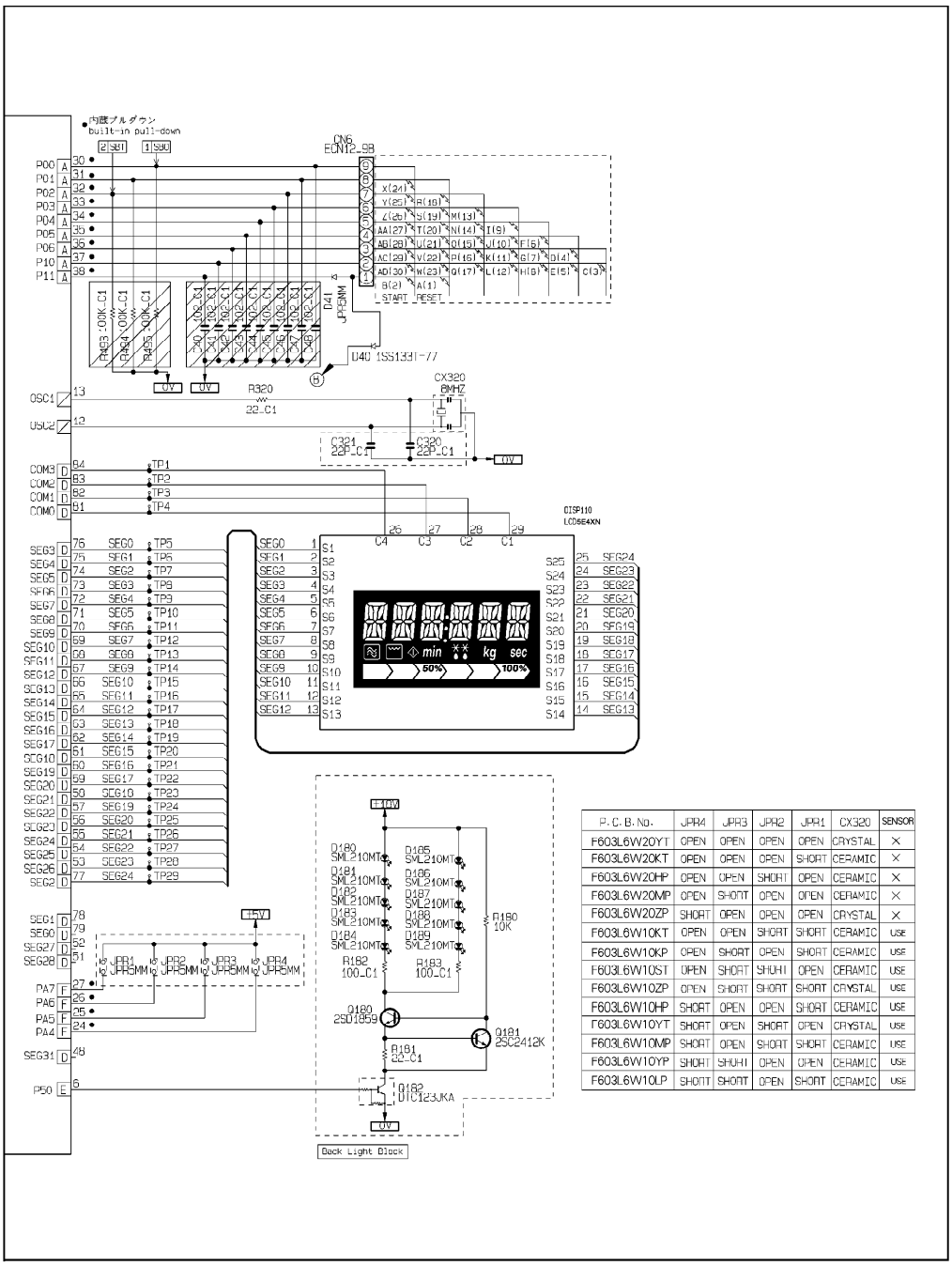

P. C. BOARD(D) No.
F655555W00AP
/suser2/SIMMC/27L/S.5R9/PP/00/S.5R9.00.cir
NC
INVERTER P.C.B
PWM
Thermistor
Sensitivity change
Door CLOSE -) HI
RY1 INVERTER
Voltage ADJ
RY1-Inverter/Fan
RY2-LAMP
RY3-Grill Heater



P.C.B.AU No.	JPR3	JPR2	JPR1	CX320	C320 C321	R320 (ohm)	P.C.B.DU No.	PC BOARD (D)
F603L5R90YP	OPEN	OPEN	OPEN	CERAMIC	——	22	F603Y5R90HN	F65555W00AP
F603L5R90HP	OPEN	OPEN	SHORT	CERAMIC	——	22		
F603L5R90YT	OPEN	SHORT	OPEN	CRYSTAL	22P	22		

5.3. NN-K574MF/WF, NN-K544WF


CN1
ECN20-5W015-EX
T10
AETPSL000P(MITSUOKA)
230/240V 50Hz
D25 510V
D26 1100VEX
D27 1100VEX
D10 1A6-E (1N4003E)
D12 1A6-E (1N4003E)
D13 1A6-E (1N4003E)
D11 1A6-E (1N4003E)
R13 10K
Q10 2SD1859
R10 1K
R11 1K
ZD10 5.6ES2
C10 560-35V
R342 100K_C1
C343 101_C1
R343 100K_C1
C340 104_C1
C12 104_C1
TP30
IC1
MN101C54C
Steam Sensor Block
CN2 ECN20-3
STEAM SENSOR
INVERTER P.C.B
PS2501 1K
CN3 ECN20-3B
CN701
インバーター P板
CN4 ECN20-4
R330 33K_C1
R331 470_C1
C330 102_C1
R440 5.1K_C1
R441 470_C1
C440 104_C1
Thermistor
R290 100K
D222 1SS133T-77
D224 1SS133T-77
RY3 JQC-25F
RY2 ALD118
D220 1SS133T-77
D223 1SS133T-77
RY1 JQC-25F
D221 1SS133T-77
BZ310 2KHZ
R310 3.3K_C1
R311 1K
R360 4.7K_C1
LCDバイアス 内蔵抵抗使用
LCD bias built-in resistor use
C250 103_C1
R228 100K_C1
StartOX
Q222 DTC123JKA
GRILL
Q223 DTC123JKA
LAMP
Q224 DTC123JKA
OPEN
SHORT
Q220 2SC2412K
R220 2.2K_C1
R221 100K_C1
C221 103_C1
R227 22_C1
Q225 DTA114EKA
Q225 2SC2412K
R224 10K_C1
R223 2.2K_C1
R241 470_C1
VR23 10K
Voltage Adjust
10kohm VR
Voltage Adjust Block
RY1:Inverter/Fan
RY2:Lamp
RY3:Grill Heater
DOOR CLOSE-"HI"
NATRST
BZ
MW(INVERTER)



P.C.B.No.	JPR4	JPR3	JPR2	JPR1	CX320	SENSOR
F603L6W20YT	OPEN	OPEN	OPEN	OPEN	CRYSTAL	×
F603L6W20KT	OPEN	OPEN	OPEN	SHORT	CERAMIC	×
F603L6W20HP	OPEN	OPEN	SHORT	OPEN	CERAMIC	×
F603L6W20MP	OPEN	SHORT	OPEN	OPEN	CERAMIC	×
F603L6W20ZP	SHORT	OPEN	OPEN	OPEN	CRYSTAL	×
F603L6W10KT	OPEN	OPEN	SHORT	SHORT	CERAMIC	USE
F603L6W10KP	OPEN	SHORT	OPEN	SHORT	CERAMIC	USE
F603L6W10ST	OPEN	SHORT	SHORT	OPEN	CERAMIC	USE
F603L6W10ZP	OPEN	SHORT	SHORT	SHORT	CRYSTAL	USE
F603L6W10HP	SHORT	OPEN	OPEN	SHORT	CERAMIC	USE
F603L6W10YT	SHORT	OPEN	SHORT	OPEN	CRYSTAL	USE
F603L6W10MP	SHORT	OPEN	SHORT	SHORT	CERAMIC	USE
F603L6W10YP	SHORT	SHORT	OPEN	OPEN	CERAMIC	USE
F603L6W10LP	SHORT	SHORT	OPEN	SHORT	CERAMIC	USE

5.4. PARTS LIST

5.4.1. NN-S554MF/S554WF/K574MF/K574WF/K544WF

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
BZ310		AEFBAT2001	BUZZER	1	2.0KHz
C221		AECUU06F103Z	CHIP CAPACITOR	1	0.01 μ F/50V
C484		AECUU06F103Z	CHIP CAPACITOR	1	0.01 μ F/50V (K574MF/WF)
C343		AECUU06C101J	CHIP CAPACITOR	1	100PF/50V
C12,C340,C440		AECUT06F104Z	CHIP CAPACITOR	3	0.1 μ F/25V
C320,C321		AECUT06C180J	CHIP CAPACITOR	2	18PF/25V, S554MF/WF (YTE,ZPE)
C320,C321		AECUU06C220J	CHIP CAPACITOR	2	22PF/50V (K574/K544 (YTE,ZPE))
C330		AECUU06R102K	CHIP CAPACITOR	1	1000PF/50V
C481		AECUU06F473Z	CHIP CAPACITOR	1	0.047 μ F/50V (K574MF/WF)
C10		AECETK1V561B	AL CHEM CAPACITOR	1	560 μ F/35V
C482		AECETS1H010B	AL CHEM CAPACITOR	1	1 μ F/50V (K574MF/WF)
C483		AECETS1HR47B	AL CHEM CAPACITOR	1	0.47 μ F/50V (K574MF/WF)
C485		AECETS1H2R2B	AL CHEM CAPACITOR	1	2.2 μ F/50V (K574MF/WF)
CN1		AEEMXH01505W	CONNECTOR	1	5 Pin
CN2		AEEMMF00703W	CONNECTOR	1	3 Pin (K574MF/WF)
CN3		F03524U00AP	CONNECTOR	1	(S554MF/WF)
CN3		F03524U50AP	CONNECTOR	1	(K574MF/WF,K544WF)
CN4		AEEMXH00F04W	CONNECTOR	1	4 Pin
CN6		AEEM09FDZBTM	CONNECTOR	1	9 Pin
CX320		AEFOS800MG06	CERAMIC RESONATOR	1	8.0MHz (EXCEPT YTE, ZPE)
CX320		AEYXAT49-8MA	CRYSTAL RESONATOR	1	8.0MHz (YTE,ZPE)
DISP110		AEDDHJ5U20XN	LCD	1	(S554MF/WF)
DISP110		AEDDHJ5E40XN	LCD	1	(K574MF/WF,K544WF)
DISP1 HOLDER		F66174U20AP	LCD HOLDER	1	(S554MF/WF)
DISP1 HOLDER		F66175E40XN	LCD HOLDER	1	(K574MF/WF,K544WF)
		F67525E40XN	DIFFUSION SHEET	1	(K574MF/WF,K544WF)
D10-D13		AESSRCT1A6-E	DIODE	4	
D40,D220,D221,D223		AESS133T-77	DIODE	4	
D222,D224		AESS133T-77	DIODE	2	(K574MF/WF,K544WF)
D25		AERZ511KD10D	VARSITOR	1	
D26,D27		AERZ102KD10A	VARSITOR	2	
D180-D183		AESQPY1112H	CHIP-LED	4	
D184-D189		AESQPY1112H	CHIP-LED	6	(K574MF/WF,K544WF)
IC1		MN101C589EZ	L.S.I.	1	(S554MF/WF)
IC1		MN101C54CFJ	L.S.I.	1	(K574MF/WF,K544WF)
IC480		AEICUPC358G2	IC	1	(K574MF/WF)
Q226		AESA14EKE	CHIP DIGI-TRANSISTOR	1	
Q182,Q223,Q224		AESC23JKE	CHIP DIGI-TRANSISTOR	3	
Q222		AESC23JKE	CHIP DIGI-TRANSISTOR	1	(K574MF/WF,K544WF)
Q10,Q180		2SD1859TV2Q	TRANSISTOR	2	
Q181,Q220,Q225		2SC2412KT146	CHIP TRANSISTOR	3	
R182,R183		AERJ06J101R	CHIP RESISTOR	2	100 Ω,1/10W,5% (K574MF/WF,K544WF)
R226		AERJ06J103R	CHIP RESISTOR	1	10K,1/10W,5% (S554MF/WF)
R224		AERJ06J103R	CHIP RESISTOR	1	10K,1/10W,5% (K574MF/WF,K544WF)
R490,R492		AERJ06J103R	CHIP RESISTOR	2	10K,1/10W,5% (K574MF/WF)
R221,R228,R342,R343		AERJ06J104R	CHIP RESISTOR	4	100K,1/10W,5%
R483,R484,R489		AERJ06J105R	CHIP RESISTOR	3	1 Ω,1/10W,5% (K574MF/WF)
R485		AERJ06J154R	CHIP RESISTOR	1	150K,1/10W,5% (K574MF/WF)
R488,R491		AERJ06J202R	CHIP RESISTOR	2	2K,1/10W,5% (K574MF/WF)
R320		AERJ06J220R	CHIP RESISTOR	1	22 Ω,1/10W,5%
R181,R227		AERJ06J220R	CHIP RESISTOR	2	22 Ω,1/10W,5% (K574MF/WF,K544WF)
R220,R222,R223		AERJ06J222R	CHIP RESISTOR	3	2.2K,1/10W,5%

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
R310		AERJ06J332R	CHIP RESISTOR	1	3.3K,1/10W,5%
R330		AERJ06J333R	CHIP RESISTOR	1	33K,1/10W,5%
R181		AERJ06J360R	CHIP RESISTOR	1	36 Ω ,1/10W,5% (S554MF/WF)
R487		AERJ06J433R	CHIP RESISTOR	1	43K,1/10W,5% (K574MF/WF)
R331,R441		AERJ06J471R	CHIP RESISTOR	2	470 Ω ,1/10W,5%
R360		AERJ06J472R	CHIP RESISTOR	1	4.7K,1/10W,5%
R480,R481		AERJ06J472R	CHIP RESISTOR	2	4.7K,1/10W,5% (K574MF/WF)
R440		AERJ06J512R	CHIP RESISTOR	1	5.1K,1/10W,5%
R486		AERJ06J684R	CHIP RESISTOR	1	680K,1/10W,5% (K574MF/WF)
R10,R11,R311		AERDY2TJ102T	CARBON RESISTOR	3	1K,1/4W,5%
R12,R180		AERDY2TJ103T	CARBON RESISTOR	2	10K,1/4W,5%
R290		AERDY2TJ104T	CARBON RESISTOR	1	100K,1/4W,5%
RY1		AEBGJQC25F18	POWER RELAY	1	
RY3		AEBGJQC25F18	POWER RELAY	1	(K574MF/WF,K544WF)
RY2		AEBLD118	POWER RELAY	1	
T10		AETP5L00QP	LOW VOLTAGE TRANSFORMER	1	
ZD10		AESZMTZJ5R6B	ZENER DIODE	1	

5.4.2. NN-K593MF

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
BZ310		AEFBAT2001	BUZZER	1	2.0KHz
C80,C81,C221,C484,C486		AECUU06F103Z	CHIP CAPACITOR	5	0.01 μ F/50V
C90,C343		AECUU06C101J	CHIP CAPACITOR	2	100PF/50V
C12,C222,C340,C440		AECUT06F104Z	CHIP CAPACITOR	4	0.1 μ F/25V
C330		AECUU06R102K	CHIP CAPACITOR	1	1000PF/50V
C481		AECUU06F473Z	CHIP CAPACITOR	1	0.047 μ F/50V
C483		AECETS1HR47B	CHIP CAPACITOR	1	0.47 μ F/50V
C482		AECETS1H010B	CHIP CAPACITOR	1	1 μ F/50V
C485		AECETS1H2R2B	CHIP CAPACITOR	1	2.2 μ F/50V
C10		AECETK1V561B	AL CHEM CAPACITOR	1	560 μ F/35V
C13		AECETS1C220B	AL CHEM CAPACITOR	1	22 μ F/16V
CN1		K1KA03A00409	CONNECTOR	1	5 Pin
CN2		AEEMMF00703W	CONNECTOR	1	3 Pin
CN3		F03524U00AP	CONNECTOR	1	
CN4		AEEMXH00F04W	CONNECTOR	1	4 Pin
CN5		AEEM17F9604S	CONNECTOR	1	17 Pin
CN6		AEEM17F9604S	CONNECTOR	1	17 Pin
CX320		AEFOS800MG06	CERAMIC RESONATOR	1	8.0MHz
DISP110		AEDDHJ5R80EP	LCD	1	
DISP1 HOLDER		F66175W00AP	LCD HOLDER	1	
		F67525E40XN	DIFFUSION SHEET	1	
D10-D13		AESSRCT1A6-E	DIODE	4	
D40,D220-D225		AESS133T-77	DIODE	7	
D25		AERZ511NS10D	VARSITOR	1	
D26,D27		AERZ102KD10A	VARSITOR	2	
D180-D189		AESQPY1112H	CHIP-LED	10	
PIN1,PIN2		AEPINIPS-1E7		2	
IC1		MN101C54CEL	L.S.I	1	
IC480		AEICUPC358G2	IC	1	
Q226		AESA14EKE	CHIP DIGI-TRANSISTOR	1	

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
Q182,Q222,Q223,Q224		AESC23JKE	CHIP DIGI-TRANSISTOR	4	
Q10,Q180		2SD1859TV2Q	TRANSISTOR	2	
Q181,Q220,Q225		2SC2412KT146	CHIP TRANSISTOR	3	
SW1,SW2,SW21-SW23,SW28-SW30		EVQ11L05R	SLIGHT TOUCH SWITCH	8	
RSW90		AEVQSRBV18	REVOLVING SWITCH	1	
RE80		AEVQEC16B24	REVOLVING ENCODER	1	
R182,R183		AERJ06J101R	CHIP RESISTOR	2	100 Ω,1/10W,5%
R80,R81		AERJ06J102R	CHIP RESISTOR	2	1K,1/10W,5%
R82,R83,R90,R94,R224,R490, / R492		AERJ06J103R	CHIP RESISTOR	7	10K,1/10W,5%
R221,R228,R342,R343		AERJ06J104R	CHIP RESISTOR	4	100K,1/10W,5%
R483,R484,R489		AERJ06J105R	CHIP RESISTOR	3	1M,1/10W,5%
R91		AERJ06J152R	CHIP RESISTOR	1	1.5K,1/10W,5%
R13,R485		AERJ06J154R	CHIP RESISTOR	2	150K,1/10W,5%
R95		AERJ06J163R	CHIP RESISTOR	1	16K,1/10W,5%
R488,R491		AERJ06J202R	CHIP RESISTOR	2	2K,1/10W,5%
R98,R181,R320		AERJ06J220R	CHIP RESISTOR	3	22 Ω,1/10W,5%
R220,R222,R223		AERJ06J222R	CHIP RESISTOR	3	2.2K,1/10W,5%
R96		AERJ06J303R	CHIP RESISTOR	1	30K,1/10W,5%
R92,R310		AERJ06J332R	CHIP RESISTOR	2	3.3K,1/10W,5%
R330		AERJ06J333R	CHIP RESISTOR	1	33K,1/10W,5%
R487		AERJ06J433R	CHIP RESISTOR	1	43K,1/10W,5%
R331,R441,R496		AERJ06J471R	CHIP RESISTOR	3	470 Ω,1/10W,5%
R360,R480,R481		AERJ06J472R	CHIP RESISTOR	3	4.7K,1/10W,5%
R97		AERJ06J683R	CHIP RESISTOR	1	68K,1/10W,4%
R486		AERJ06J684R	CHIP RESISTOR	1	680K,1/10W,5%
R440		AERJ06J512R	CHIP RESISTOR	1	5.1K,1/10W,5%
R93		AERJ06J622R	CHIP RESISTOR	1	6.2K,1/10W,5%
R97		AERJ06J683R	CHIP RESISTOR	1	68K,1/10W,5%
R10,R11,R311		AERDY2TJ102T	CARBON RESISTOR	3	1K,1/4W,5%
R12,R180		AERDY2TJ103T	CARBON RESISTOR	2	10K,1/4W,5%
R290		AERDY2TJ104T	CARBON RESISTOR	1	100K,1/4W,5%
RY1,RY3		AEGG5G1A18	POWER RELAY	2	
RY2		AEBJQ1A18	POWER RELAY	1	
T10		AETP5L00QP	LOW VOLTAGE TRANSFORMER	1	
ZD10		AESZMTZJ5R6B	ZENER DIODE	1	

ORDER NO.SIMMC 0301001A1

E1

Service Manual

Microwave Oven

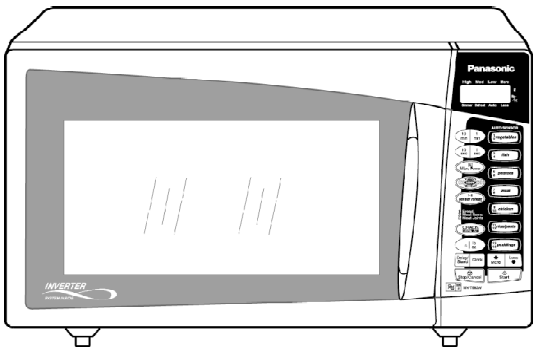
Simplified

NN-T583SF / NN-T563SF / NN-T563SAF / NN-S563 NN-S553 / NN-S543 NN-S533 / NN-S523 NN-S513 / NN-S503

APH(USA)

CPH(CANADA)

Please file and use this specified manual together with the service manual for Model NN-S560BF/WF(ORDER NO. SIMMC0001002C3).



SPECIFICATIONS

Specifications for APH:

Specifications: / Model:	NN-T583SF	NN-T563SF/SAF	NN-S563BF/WF/MF	NN-S553BF/WF	NN-S543BF/WF/BFW	NN-S533BF/WF	NN-S503BF/WF
Power Source:	120V AC Single Phase, 60Hz						
Power Requirement:	1460W	1460W	1460W	1460W	1460W	1460W	1460W
Output(IEC705-88):	1350W	1300W	1350W	1350W	1300W	1300W	1350W
Microwave Frequency:	*2450MHz						
Timer:	*99 min. 99 sec.						
Outside Dimensions:	*20"(518mm)(W) x 16"(407mm)(D) x 11"(301mm)(H)						
Oven Cavity Dimensions:	*14 "(375mm)(W) x 15"(386mm)(D) x 8 "(225mm)(H)						
Weight:	*23lbs. (10.5 kg)						
PbF	This product with PbF						
Output power: IEC705-88 Test Procedure							
Specifications subject to change without notice.							

Specifications for CPH:

Specifications: / Model:	NN-T583SF	NN-S563BF/WF/MF	NN-S533WF	NN-S523WF	NN-S513WF
Power Source:	120V AC Single Phase, 60Hz				
Power Requirement:	1460W	1460W	1460W	1460W	1460W
Output(IEC705-88):	1250W	1250W	1200W	1200W	1250W
Microwave Frequency:	*2450MHz				
Timer:	*99 min. 99 sec.				
Outside Dimensions:	*20"(518mm)(W) x 16"(407mm)(D) x 11"(301mm)(H)				
Oven Cavity Dimensions:	*14"(375mm)(W) x 15"(386mm)(D) x 8"(225mm)(H)				
Weight:	*23lbs. (10.5 kg)				
PbF	This product with PbF				
Output power: IEC705-88 Test Procedure					
Specifications subject to change without notice.					

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

WARNING

1. This product should be serviced only by trained, qualified personnel.
2. Though this product has been manufactured in compliance with:
   "Federal Performance Standard 21 CFR Subchapter J"(D.H.H.S): U.S.A. models
   or "Radiation Emitting Devices Act"(Health and Welfare Canada): Canadian models
   it is very important all repairs should be made in accordance with procedures described in this manual to avoid being exposed to excessive microwave radiation.
3. Check for radiation leakage before and after every servicing according to the "procedure for measuring radiation leakage."
4. If the unit cannot be repaired on site, advise the customer not to use until unit is repaired.
5. Any serviceman who learns of any accident pertaining to microwave radiation leakage including the oven operating with open door should immediately notify the appropriate address listed below and Center for Devices and Radiological Health, DHHS.

IN U.S.A. (PASC)	Panasonic Services Company 50 Meadowland Parkway, Secaucus, New Jersey 07094 Attention: Technical Service Division. (201)348-7000	IN PUERTO RICO (PSC)	PSC San Gabriel Industrial Park 65th Infantry Ave. Km.9.5 Carolina, Puerto Rico 00985 (787)750-4300
		IN CANADA (PCI)	Panasonic Canada Inc. 5770 Ambler Drive, Mississauga, Ontario, L4W2T3 (905)624-5010

6. There are special components used in the microwave oven which are important for safety. These parts are marked with a ⚠ on the replacement parts list. It is essential that these critical parts should be replaced only with the manufacture's specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the orginal design.

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

(A) Do not operate or allow the oven to be operated with the door open.
(B) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
   (1) Interlock operation
   (2) Proper door closing
   (3) Seal and sealing surfaces (arcing, wear, and other damage)
   (4) Damage to or loosening of hinges and latches.
   (5) Evidence of dropping or abuse
(C) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, waveguide or transmission line, and cavity for proper alignment, integrity and connections.
(D) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.
(E) A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

CAUTION

About lead free solder (PbF)

Distinction of PbF PCB: PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.

Caution:
- Pb free solder has a higher melting point than standard solder; Typically the melting point is 30 - 40˚C higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 370 ± 10˚C.
- Pb free solder will tend to splash when heated too high (about 600˚C).

Panasonic®

DANGER OF HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LIVE) OF THE INVERTER POWER SUPPLY **(U)**

INVERTER WARNING

This Inverter board looks like a regular PCB. However, this PCB drives the magnetron tube with extremely high voltage and high current. NEW H.V.

IT HAS:

1. **Very high voltage and high current circuits.**
   It functions the same as the high voltage transformer and high voltage capacitor in ordinary microwave ovens.
2. **Aluminum heat sink is energized with very high voltages and high heat energy.**
3. **Very high voltage may remain in circuitry even when oven is off. High voltage charge may remain in the capacitors on the board.**

DO NOT:

* 1. **Do not touch circuitry because it has very hot (high voltage) circuitry. Even when replacing board, extreme care should be taken to avoid possible electric shock hazards. High voltage charge may remain in circuit.**

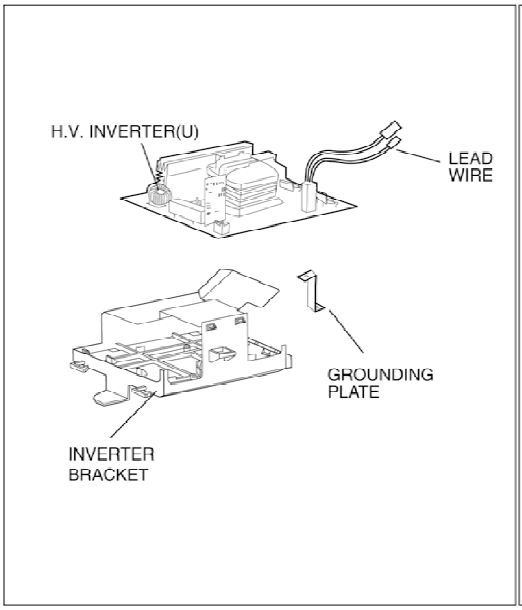
* 2. **Do not touch aluminum heat sink because it is energized with very high voltage and also very hot in high heat energy.**

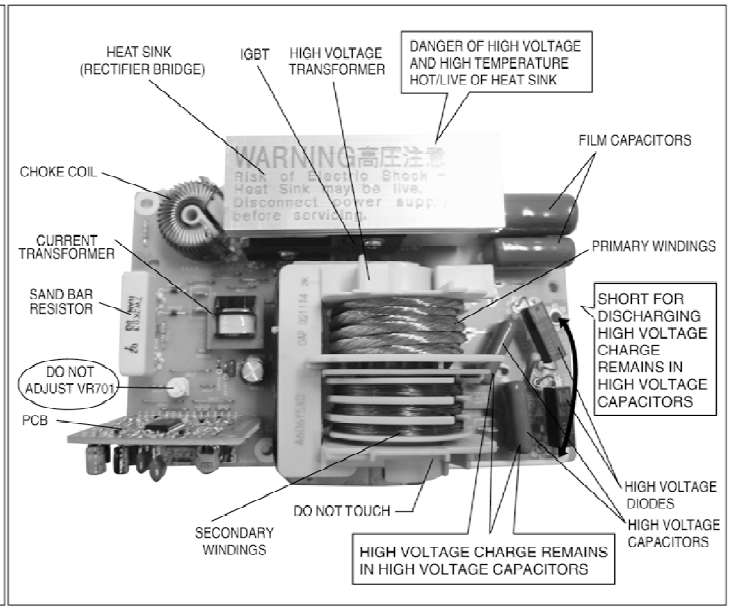
* 3. **Do not try to adjust or tamper with preset control on the Inverter board because it is very dangerous to adjust without proper test equipment.**

* 4. **Do not test oven while Inverter grounding plate or screws are loose. It is very dangerous to operate H.V. Inverter Circuit (U) with loose mounting screws or if improperly grounded.**

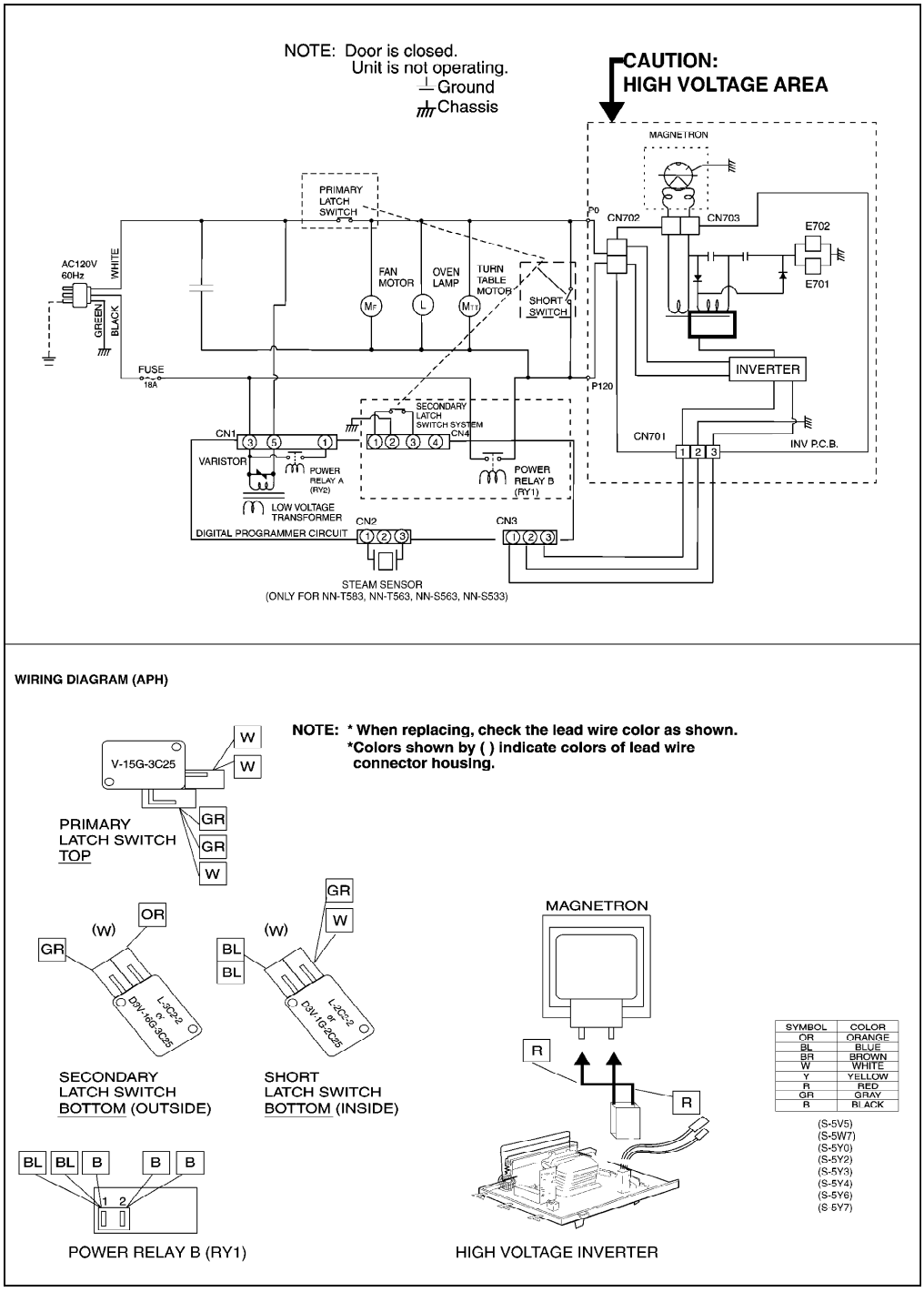
* 5. **For USA only:**
   Do not try to repair Inverter PCB because it is very dangerous to repair. Replace as a complete High Voltage Inverter Circuit unit and return fully re-packed with original shipping box and shipping materials.

INVERTER POWER SUPPLY



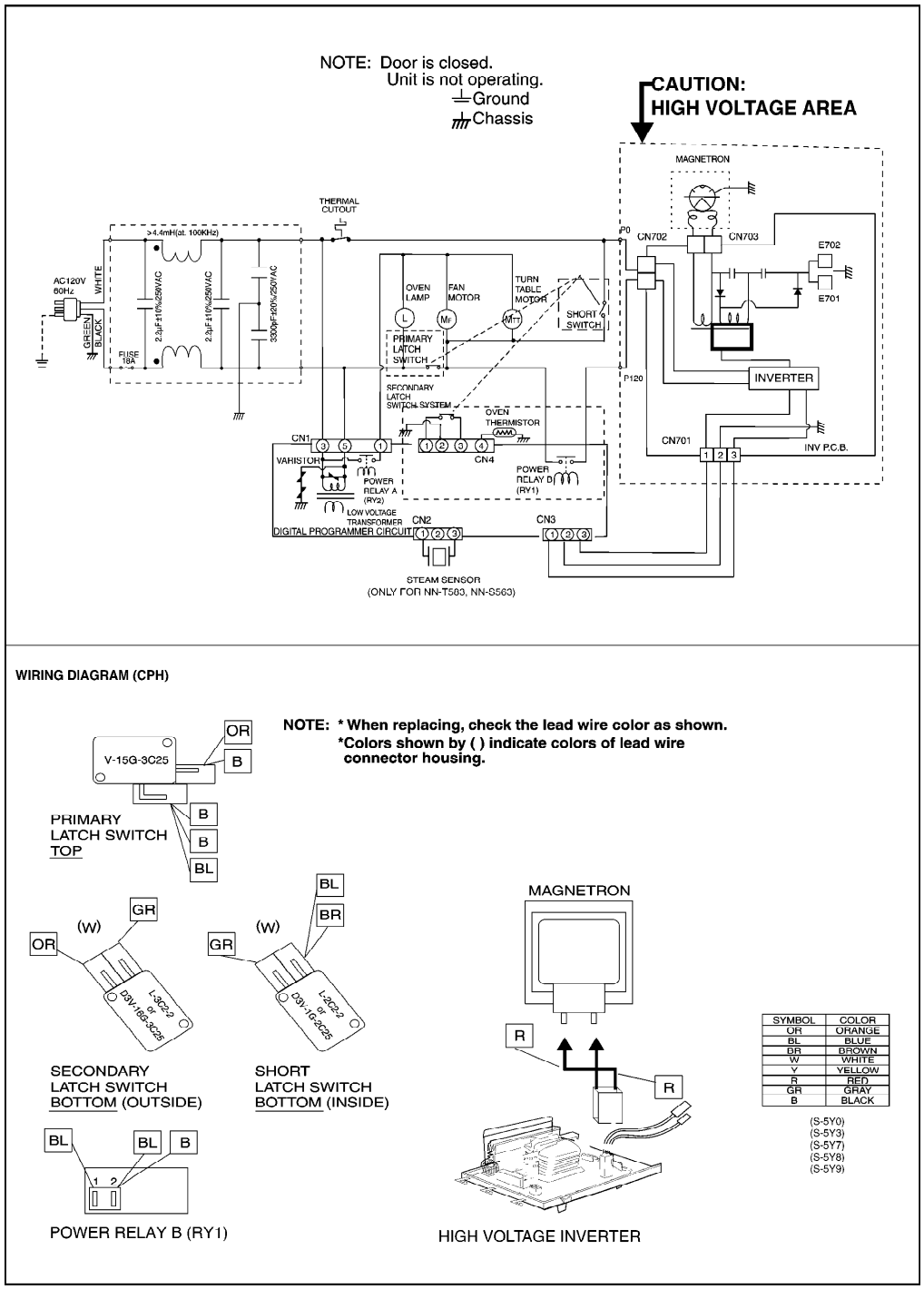


1. SCHEMATIC DIAGRAM (APH)



WIRING DIAGRAM (APH)

2. SCHEMATIC DIAGRAM (CPH)



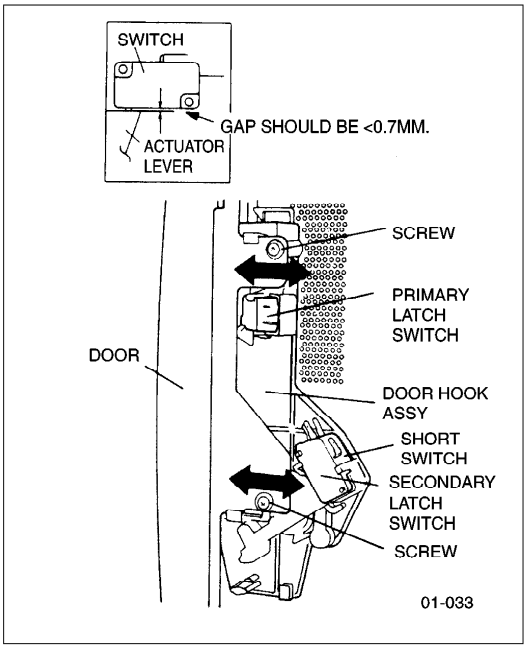
3. MEASUREMENTS AND ADJUSTMENTS

WARNING

* For continued protection against radiation hazard, replace only with identical replacement parts (For touch models Part No. J61424T00AP, Type No. V-15G-3C25 for Primary latch switch; Part No. J61414T00AP, Type No. D3V-16G-3C25 for Secondary latch switch and Part No. J61784T00AP, Type No. D3V-1G-2C25 for short switch.)
* When the 18 Amp. fuse is blown due to the operation of the short switch, you must replace power relay B (For Part No. AEGG5G1A18, Type No. G5G-1A12VDC). Primary latch switch and the short switch. Then follow the installation procedures below.
* Interlock switch replacement In replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their ability to hold the switches.
* Refer to schematic diagram to ensure proper connection.

3.1. Adjustment of primary latch switch, secondary latch switch and short switch.

1. **Mount the Primary latch switch, the Secondary latch switch and the short switch to the door hook assembly as shown in ILL.**
   NOTE:
   No specific individual adjustment during installation of the Primary latch switch, Secondary latch switch or short switch to the door hook are required.
2. **When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of the arrows in the illustration so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.**
3. **Reconnect the short switch and check the continuity of the monitor circuit and all latch switches again by following the component test procedures.**



3.2. Measurement of microwave output

The output power of the magnetron can be determined by performing IEC standard test procedures. However,due to the complexity of IEC test procedures, it is recommended to test the magnetron using the simple method outlined below.

Necessary Equipment:

***1 liter beaker *Glass thermometer / *Wrist watch or stopwatch**

NOTE:

Check the line voltage under load.Low voltage will lower the magnetron output. Take the temperature readings and heating time as accurately as possible.

1. **Fill the beaker with exactly one liter of tap water.Stir the water using the thermometer and record the water temperature. (recorded as T1).**
2. **Place the beaker on the center of glass tray. / Set the oven for High power and heat it for exactly one minute.**
3. **Stir the water again and read the temperature of the water. (recorded as T2).**
4. **The normal temperature rise at High power level for each model is as shown in table.**

TABLE (1L-1min.test)

RATED OUTPUT	TEMPERATURE RISE
1200W(IEC705-88)	Min. 18.5°F(10.3°C)
1300W(IEC705-88)	Min. 19.8°F(11.1°C)
1400W(IEC705-88)	Min. 21.6°F(12.0°C)

4. PROCEDURE FOR MEASURING MICROWAVE ENERGY LEAKAGE

WARNING

Check for radiation leakage after every servicing. Should the leakage be more than 2 mW/cm² (1mW/cm² for Canada) inform PASC, PSC, or PCI immediately. After repairing or replacing any radiation safety device, keep a written record for future reference, as required by D.H.H.S. and Health and Welfare Canada regulation. This requirement must be strictly observed. In addition, the leakage reading must be recorded on the service repair ticket while in the customer's home.

NOTE:

The U.S. Government standard is 5 mW/cm$_2$ while in the customer's home. 2mW/cm$_2$ stated here is our own voluntary standard. (1mW/cm$_2$ for Canada)

4.1. Equipment

- Electromagnatic radiation monitor
- Glass thermometer 212°F or 100°C
- 600cc glass beaker

4.2. Procedure for measuring radiation leakage

Note before measuring.

- Do not exceed meter full scale deflection. Leakage monitor should initially be set to the highest scale.
- To prevent false readings the test probe should be held by the grip portion of the handle only and moved along the shaded area in Figure no faster than 1 inch/sec (2.5cm/sec).
- Leakage with the outer panel removed ..... less than 5mW/cm$_2$.
- Leakage for a fully assembled oven with door normally closed ..... less than 2mW/cm $_2$ (1mW/cm $_2$ for Canada).
- Leakage for a fully assembled oven [Before the latch switch (primary) is interrupted] while pulling the door ..... less than 2mW/cm $_2$.

1. Pour 275 ± 15cc (9ozs$_s$± 1/2oz) of 20°C ± 5°C (68° ± 9°F) water in a beaker which is graduated to 600cc, and place in the center of the oven.

2. Set the radiation monitor to 2450MHz and use it following the manufacturer's recommended test procedure to assure correct results.
3. When measuring the leakage, always use the 2 inch (5cm) spacer supplied with the probe.
4. Tap the start pad or set the timer and with the magnetron oscillating, measure the leakage by holding the probe perpendicular to the surface being measured.

4.2.1. Measurement with the outer panel removed.

Whenever you replace the magnetron, measure for radiation leakage before the outer panel is installed and after all necessary components are replaced or adjusted. Special care should be taken in measuring around the magnetron.

WARNING Avoid contacting any high voltage parts.

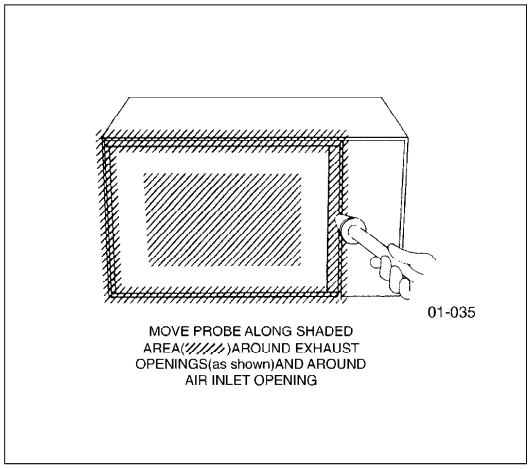
4.2.2. Measurements with a fully assembled oven.

After all components, including outer panel are fully assembled, measure for radiation leakage around the door periphery, the door viewing window, the exhaust opening and air inlet openings.

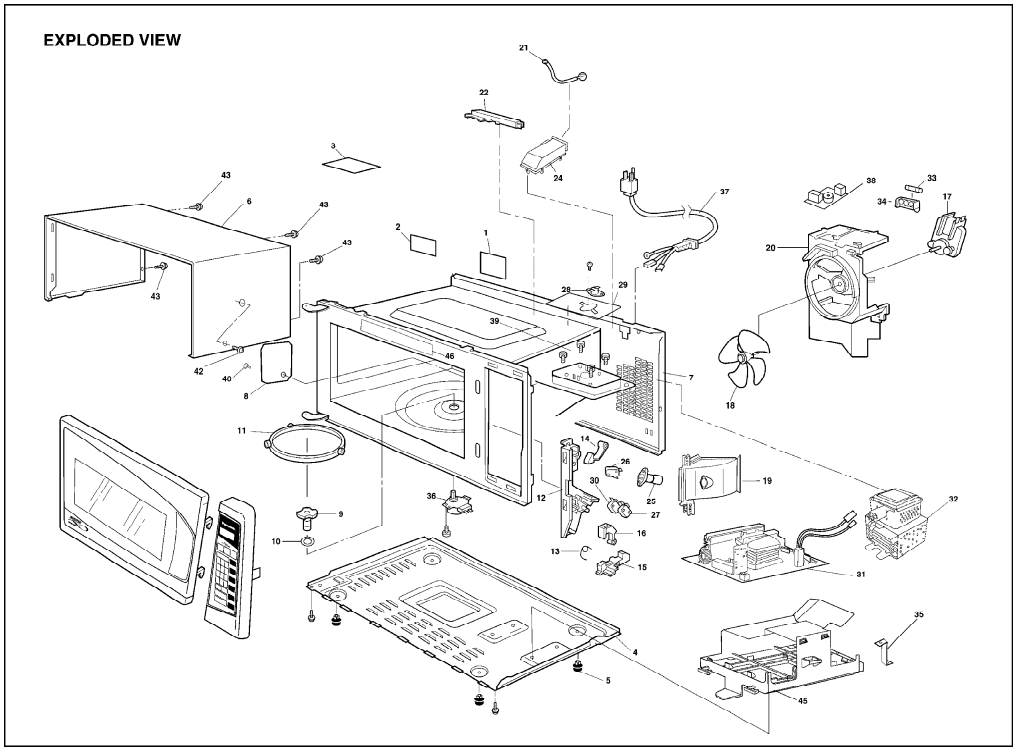
4.3. Record keeping and notification after measurement

- After any adjustment or repair to a microwave oven, a leakage reading must be taken. Record this leakage reading on the repair ticket even if it is zero.
  A copy of this repair ticket and the microwave leakage reading should be kept by repair facility.
- Should the radiation leakage be more than 2 mW/cm$_2$ (1mW/cm for Canada) after determining that all parts are in good condition, functioning properly, and genuine replacement parts as listed in this manual have been used, immediately notify PASC, PSC or PCI.

4.4. At least once a year, have the radiation monitor checked for calibration by its manufacturer.



5. EXPLODED VIEW AND PARTS LIST



6. PARTS LIST

NOTE:

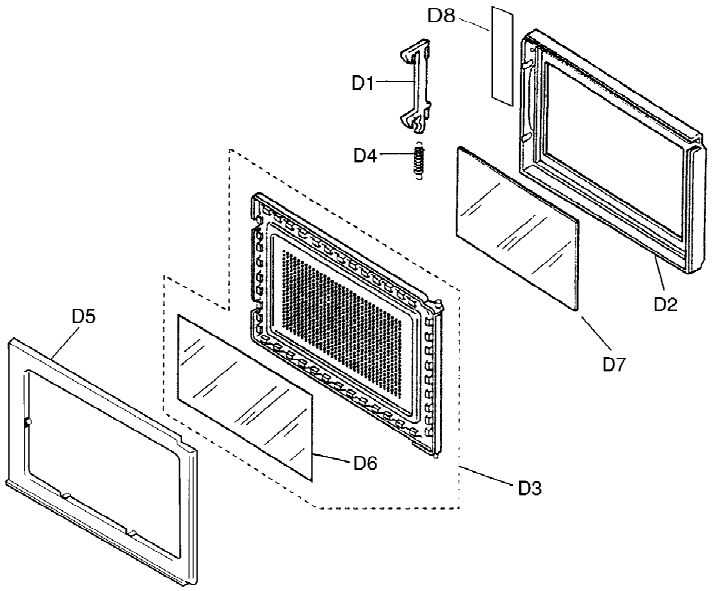
1. **When ordering replacement part(s), please use part number(s) shown in this part list.**
   Do not use description of the part.
2. **Important safety notice:**
   Components identified by ⚠ mark have special characteristics important for safety.

When replacing any of these components, use only manufacture's specified parts.

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
1		F00064W70AP	CAUTION LABEL	1	T*** APH
1		F00069660AP	CAUTION LABEL	1	S*** APH
1		F00067600CP	CAUTION LABEL	1	CPH
2		F00075Y00SAP	NAME PLATE	1	T583SF APH
2		F00075Y20SAP	NAME PLATE	1	T563SF APH
2		F00075V50SAP	NAME PLATE	1	T563SAF APH
2		F00075Y30BAP	NAME PLATE	1	S563BF APH
2		F00075Y30HAP	NAME PLATE	1	S563WF APH
2		F00075Y30SAP	NAME PLATE	1	S563MF APH
2		F00075Y40BAP	NAME PLATE	1	S553BF APH
2		F00075Y40HAP	NAME PLATE	1	S553WF APH
2		F00075W70BAP	NAME PLATE	1	S543BF APH
2		F00075W70HAP	NAME PLATE	1	S543WF APH
2		F00075W70BAPW	NAME PLATE	1	S543BFW APH
2		F00075Y70BAP	NAME PLATE	1	S533BF APH
2		F00075Y70HAP	NAME PLATE	1	S533WF APH
2		F00075Y60BAP	NAME PLATE	1	S503BF APH
2		F00075Y60HAP	NAME PLATE	1	S503WF APH
3		F00339660AP	FUSE LABEL	1	
4		F10015Y00AP	BASE	1	
5		F10084T00AP	RUBBER FOOT	4	
6		F110D5Y00SAP	CABINET BODY(U)	1	T583SF APH/CPH, T563SF APH
6		F110D5Y30SAP	CABINET BODY(U)	1	T563SAF APH, S***MF
6		F110D5Y30BAP	CABINET BODY(U)	1	S***BF
6		F110D5Y30HAP	CABINET BODY(U)	1	S***WF
7	⚠	F200A5Y30AP	OVEN(U)	1	T*** APH/CPH, S563 APH/CPH, S533 APH
7	⚠	F200A5Y40AP	OVEN(U)	1	S*** APH/CPH (EXCEPT S563 APH/CPH & S533 AP
8		F20555L00AP	COVER	1	
9		F21315Y00AP	PULLY SHAFT	1	
10		F2177-F80	WASHER	1	
11		F290D9330AP	ROLLER RING(U)	1	
12	⚠	F3020-1200	DOOR HOOK	1	T*** APH/CPH
12	⚠	F30208790XN	DOOR HOOK	1	S*** APH/CPH
13		F3097-5L00	LATCH SPRING	1	S*** APH/CPH
14		F3136-1200	HOOK LEVER A	1	T*** APH/CPH
14		F31368790XN	HOOK LEVER A	1	S*** APH/CPH
15		F31374650AP	HOOK LEVER B	1	T*** APH/CPH
15		F31378790XN	HOOK LEVER B	1	S*** APH/CPH
16		F31384650AP	HOOK LEVER C	1	T*** APH/CPH
16		F31388790XN	HOOK LEVER C	1	S*** APH/CPH
17		F400A4T00AP	FAN MOTOR	1	AC120V, SINGLE PHASE, 60Hz
18		F40084T10AP	FAN BLADE	1	
19		F40254T00AP	AIR GUIDE A	1	
20		F41445Y00AP	ORIFICE	1	
21		A607S4T00AP	STEAM SENSOR	1	T*** APH/CPH, S563 APH/CPH, S533 APH

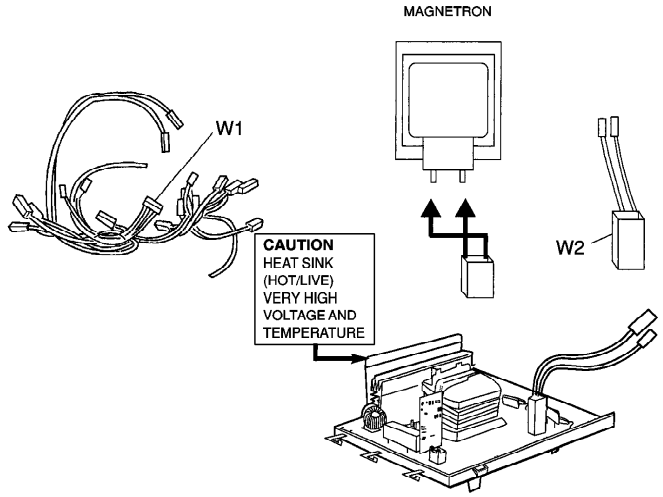
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
22		F64508660AP	SENSOR COVER B	1	T*** APH/CPH, S563 APH/CPH, S533 APH
24		F65434W00AP	SENSOR COVER C	1	T*** APH/CPH, S563 APH/CPH, S533 APH
25		F612E5Y30AP	INCANDESCENT LAMP(U)	1	125V, 60Hz, 20W
26	⚠	F61425U30XN	MICRO SWITCH	1	(PRIMARY LATCH SWITCH) (KW3-0D-A (474))
27	⚠	F61415U30XN	MICRO SWITCH	1	(SECONDARY LATCH SWITCH) (KW3-0D-A (471))
28	⚠	F61455L00CP	THERMAL CUTOUT	1	T*** APH/CPH, S*** CPH (105°C)
29		F66264T00CP	THERMAL CUTOUT INSULATION BRACKET	1	T*** APH/CPH, S*** CPH
30	⚠	F61785U30XN	MICRO SWITCH	1	(SHORT SWITCH) (KW3-0T-A (375))
31	⚠	A606Y5X00AP	H.V.INVERTER(U)	1	
32	⚠	2M261-M32F	MAGNETRON	1	APH
32	⚠	2M261-M32G	MAGNETRON	1	CPH
33	⚠	B62308250AP	FUSE	1	
34		B62314000AP	FUSE HOLDER	1	APH
35		F66625Y00AP	GROUNDING PLATE	1	
36		F63265G60AP	TURNTABLE MOTOR	1	
37	⚠	F900C4T60CP	AC CORD W/PLUG	1	T*** APH
37	⚠	F900C4T00AP	AC CORD W/PLUG	1	S*** APH
37	⚠	F900C5Y30CP	AC CORD W/PLUG	1	CPH
38		J692Y4T00CP	NOISE FILTER(U)	1	CPH
39		XTWFA4+12T	SCREW	4	FOR MAGNETRON
40		XTTFA4+6BN	SCREW	1	FOR COVER
42		XTCA4+12AFK	SCREW	1	FOR CABINET BODY SIDE (S***BF)
42		XTCA4+12AFW	SCREW	1	FOR CABINET BODY SIDE (S***WF)
42		XTCA4+12AFS	SCREW	1	FOR CABINET BODY SIDE (S***MF)
42		XTCA4+12AFM	SCREW	1	FOR CABINET BODY SIDE(T*** SF/SAF)
43		XTTAFE4T12A0	SCREW	4	FOR CABINET BODY
45		F65855X00AP	INVERTER BRACKET	1	T*** APH
45		F65855W00AP	INVERTER BRACKET	1	EXCEPT T*** APH
46		F03345W20AP	MENU LABEL	1	T583 APH
46		F03345Y30AP	MENU LABEL	1	T563SF APH, T563SAF APH, S563 APH
46		F03345Y40AP	MENU LABEL	1	S553 APH
46		F03345Y70AP	MENU LABEL	1	S533 APH

7. DOOR ASSEMBLY



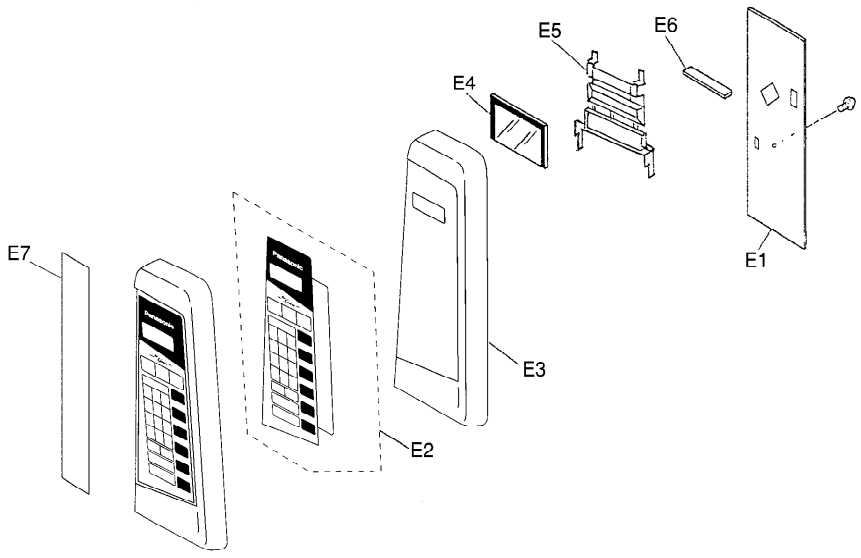
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
D1		F3018-1200	DOOR KEY A	1	T*** APH/CPH
D1		F30184Y30XN	DOOR KEY A	1	S*** APH/CPH
D2	⚠	F302A5Y00SAP	DOOR A (U)	1	T*** APH/CPH
D2	⚠	F30015Y30BAP	DOOR A	1	S***BF (EXCEPT S503BF APH)
D2	⚠	F30015Y30HAP	DOOR A	1	S***WF (EXCEPT S503WF APH)
D2	⚠	F30015Y30SAP	DOOR A	1	S***MF
D2	⚠	F30015A00BAP	DOOR A	1	S503BF APH
D2	⚠	F30014T00HAP	DOOR A	1	S503WF APH
D3	⚠	F302K5L00AP	DOOR E (U)	1	
D4		F30215G10XN	DOOR KEY SPRING	1	
D5	⚠	F30854T00AP	DOOR C	1	
D6	⚠	F31454T00AP	DOOR SCREEN A	1	
D7		F31465Y00SAP	DOOR SCREEN B	1	T583SF APH/CPH
D7		F31465Y20BAP	DOOR SCREEN B	1	T563SF APH, T563SAF APH
D7		F31465Y30BAP	DOOR SCREEN B	1	S***BF/MF (EXCEPT S503BF APH)
D7		F31465Y30HAP	DOOR SCREEN B	1	S***WF (EXCEPT S503WF APH)
D7		F31464T00BAP	DOOR SCREEN B	1	S503BF APH
D7		F31464T00HAP	DOOR SCREEN B	1	S503WF APH
D8		F02459660AP	DHHS LABEL	1	T*** APH, S503 APH
D8		F04114180CP	DHHS LABEL	1	T*** CPH

8. WIRING MATERIALS



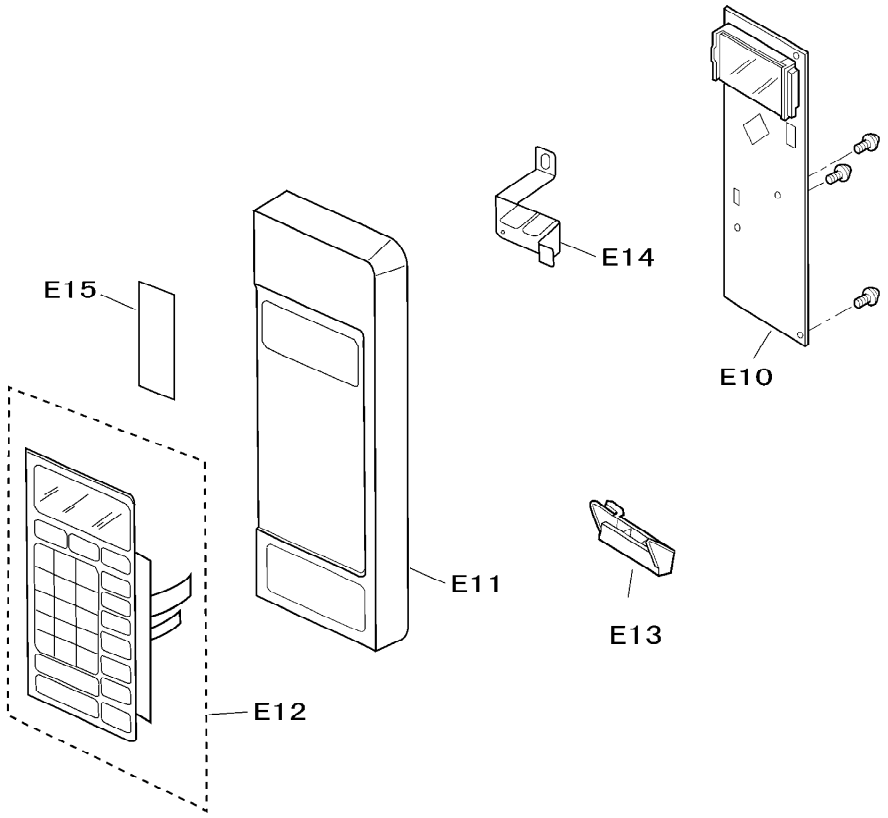
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
W1		F030A5Y30AP	LEAD WIRE HARNESS	1	APH
W1		F030A5Y30CP	LEAD WIRE HARNESS	1	CPH
W2		F030E5L00AP	H.V.LEAD WIRE	1	APH
W2		F030E4T00CP	H.V.LEAD WIRE	1	CPH

9. ESCUTCHEON BASE ASSEMBLY (NN-S*** APH/ CPH)



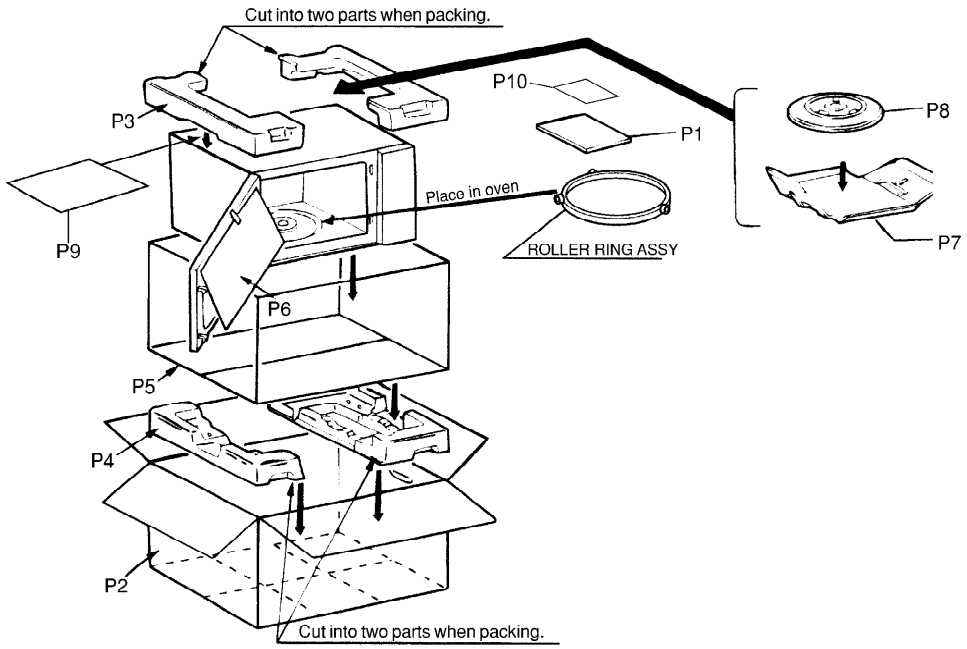
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
E1		F603L5Y30AP	D.P.CIRCUIT	1	S563BF/WF/MF APH
E1		F603L5Y40AP	D.P.CIRCUIT	1	S553BF/WF APH
E1		F603L5W70AP	D.P.CIRCUIT	1	S543BF/WF APH, S543BFW APH
E1		F603L5Y70AP	D.P.CIRCUIT	1	S533BF/WF APH
E1		F603L5Y60AP	D.P.CIRCUIT	1	S503BF/WF APH
E1		F603L5Y30CP	D.P.CIRCUIT	1	S563BF/WF/MF CPH
E1		F603L5Y70CP	D.P.CIRCUIT	1	S533WF CPH
E1		F603L5Y80CP	D.P.CIRCUIT	1	S523WF CPH
E1		F603L5Y90CP	D.P.CIRCUIT	1	S513WF CPH
E2		F630Y5Y30BAP	MEMBRANE SWITCH (U)	1	S563BF APH
E2		F630Y5Y30HAP	MEMBRANE SWITCH (U)	1	S563WF APH
E2		F630Y5Y30SAP	MEMBRANE SWITCH (U)	1	S563MF APH
E2		F630Y5Y40BAP	MEMBRANE SWITCH (U)	1	S553BF APH
E2		F630Y5Y40HAP	MEMBRANE SWITCH (U)	1	S553WF APH
E2		F630Y5W70BAP	MEMBRANE SWITCH (U)	1	S543BF APH, S543BFW APH
E2		F630Y5W70HAP	MEMBRANE SWITCH (U)	1	S543WF APH
E2		F630Y5Y70BAP	MEMBRANE SWITCH (U)	1	S533BF APH
E2		F630Y5Y70HAP	MEMBRANE SWITCH (U)	1	S533WF APH
E2		F630Y5Y60BAP	MEMBRANE SWITCH (U)	1	S503BF APH
E2		F630Y5Y60HAP	MEMBRANE SWITCH (U)	1	S503WF APH
E2		F630Y5Y30BCP	MEMBRANE SWITCH (U)	1	S563BF CPH
E2		F630Y5Y30HCP	MEMBRANE SWITCH (U)	1	S563WF CPH
E2		F630Y5Y30SCP	MEMBRANE SWITCH (U)	1	S563MF CPH
E2		F630Y5Y70HCP	MEMBRANE SWITCH (U)	1	S533WF CPH
E2		F630Y5Y80HCP	MEMBRANE SWITCH (U)	1	S523WF CPH
E2		F630Y5Y90HCP	MEMBRANE SWITCH (U)	1	S513WF CPH
E3		F80345L00BAP	ESCUTCHEON BASE	1	S***BF (EXCEPT S533BF APH & S503BF APH)
E3		F80345L00HAP	ESCUTCHEON BASE	1	S***WF (EXCEPT S533WF APH & S503WF APH)
E3		F80345L70SAP	ESCUTCHEON BASE	1	S***MF
E3		F80345Y30BAP	ESCUTCHEON BASE	1	S533BF APH
E3		F80345Y30HAP	ESCUTCHEON BASE	1	S533WF APH
E3		F80344T00BAP	ESCUTCHEON BASE	1	S503BF APH
E3		F80344T00HAP	ESCUTCHEON BASE	1	S503WF APH
E4		AEDDHJ5G60XN	DISPLAY	1	
E5		F66175L00AP	DISPLAY TUBE COVER	1	EXCEPT S503BF/WF APH
E5		F66174T00AP	DISPLAY TUBE COVER	1	S503BF/WF APH
E6		F67004T00AP	RUBBER CONNECTOR	1	
E7		F00075Y30BCP	NAME PLATE	1	S563BF CPH
E7		F00075Y30HCP	NAME PLATE	1	S563WF CPH
E7		F00075Y30SCP	NAME PLATE	1	S563MF CPH
E7		F00075Y70HCP	NAME PLATE	1	S533WF CPH
E7		F00075Y80HCP	NAME PLATE	1	S523WF CPH
E7		F00075Y90HCP	NAME PLATE	1	S513WF CPH

10. ESCUTCHEON BASE ASSEMBLY (NN-T*** APH/ CPH)



Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
E10		F603L5Y00AP	D.P.CIRCUIT	1	T583SF APH
E10		F603L5Y20AP	D.P.CIRCUIT	1	T563SF APH, T563SAF APH
E10		F603L5Y00CP	D.P.CIRCUIT	1	T583SF CPH
E11		F800L5Y00BAP	CONTROL PANEL (AU)	1	T*** APH/CPH
E12		F630Y5Y00SAP	MEMBRANE SWITCH (U)	1	T583SF APH
E12		F630Y5Y20SAP	MEMBRANE SWITCH (U)	1	T563SF APH, T563SAF APH
E12		F630Y5Y00SCP	MEMBRANE SWITCH (U)	1	T583SF CPH
E13		F82565Y00AP	DOOR OPENING LEVEL	1	T*** APH/CPH
E14		F90095X00AP	BACK PANEL	1	T*** APH/CPH
E15		F00075Y00SCP	NAME PLATE	1	T583SF CPH

11. PACKING AND ACCESORIES

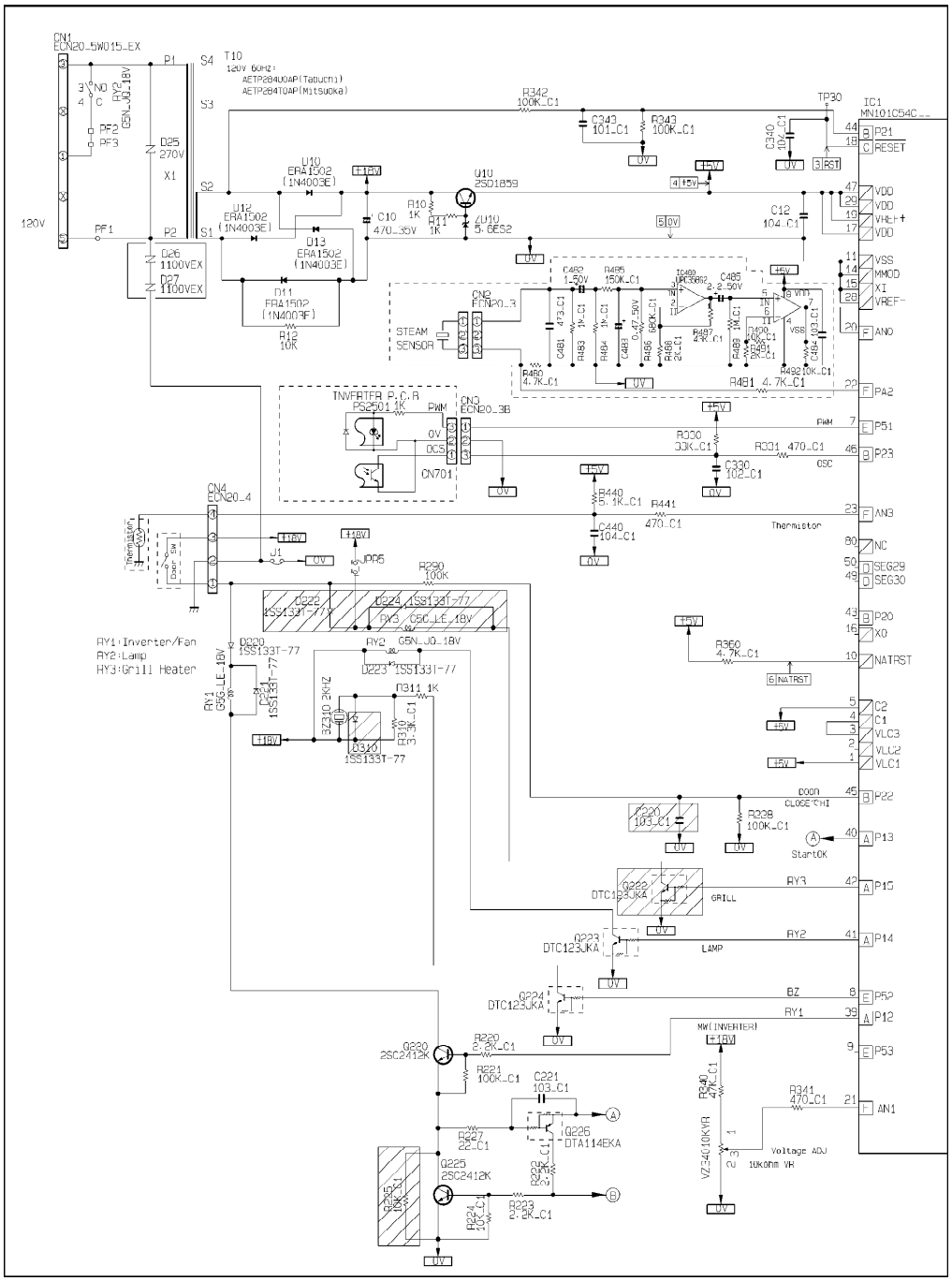


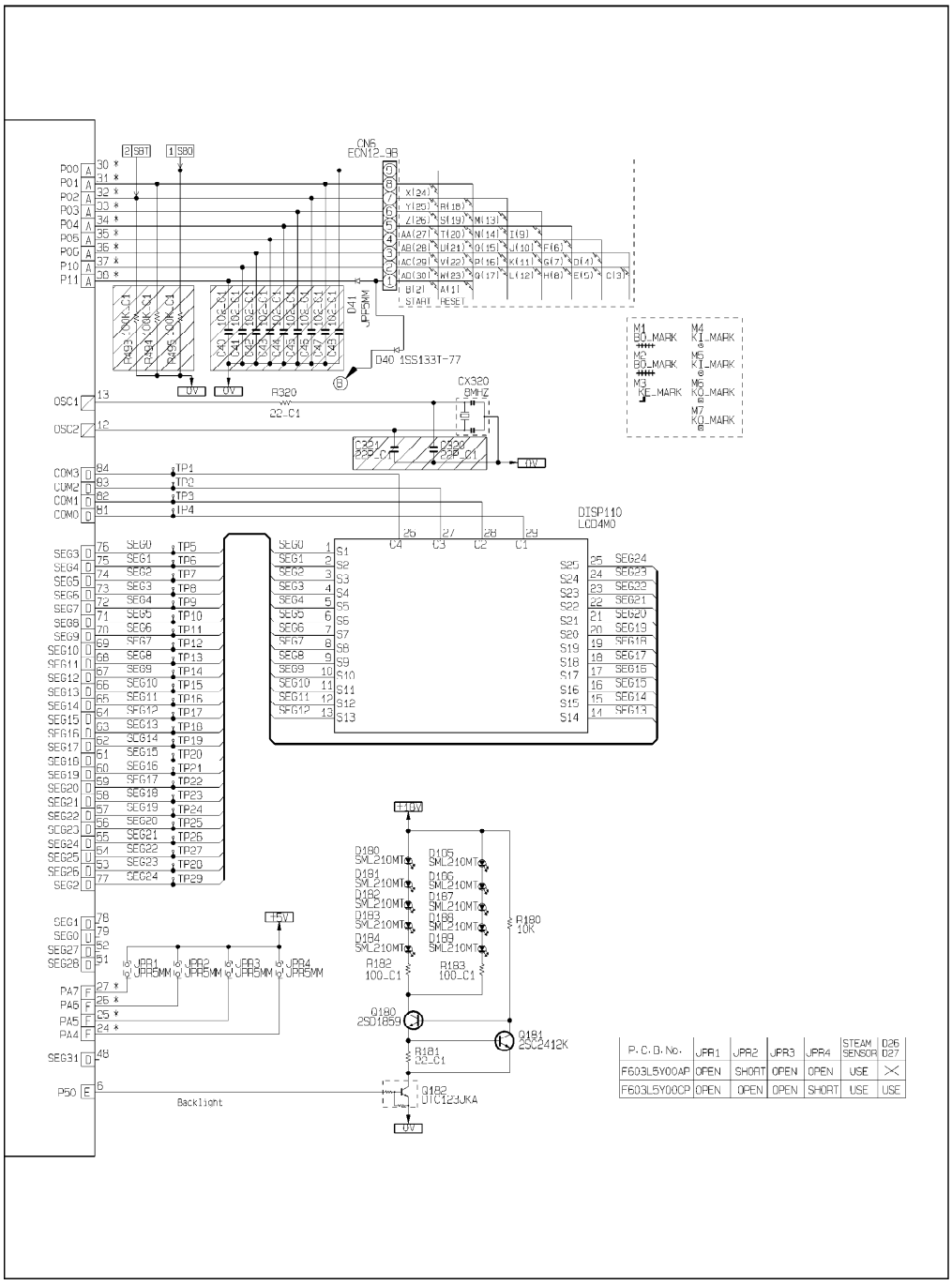
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
P1		F00035X20AP	INSTRUCTION MANUAL	1	T583SF APH
P1		F00035Y30AP	INSTRUCTION MANUAL	1	T563SF APH, T563SAF APH, S563BF/WF/MF APH
P1		F00035Y40AP	INSTRUCTION MANUAL	1	S553BF/WF APH, S503BF/WF APH
P1		F00035W70AP	INSTRUCTION MANUAL	1	S543BF/WF APH, S543BFW APH
P1		F00035Y70AP	INSTRUCTION MANUAL	1	S533BF/WF APH
P1		F00035Y00CP	INSTRUCTION MANUAL	1	T583SF CPH
P1		F00035Y30CP	INSTRUCTION MANUAL	1	S563BF/WF/MF CPH
P1		F00035Y70CP	INSTRUCTION MANUAL	1	S533WF CPH, S523WF CPH, S513WF CPH
P2		F01025Y00SAP	PACKING CASE, PAPER	1	T583SF APH
P2		F01025Y20SAP	PACKING CASE, PAPER	1	T563SF APH
P2		F01025V50SAP	PACKING CASE, PAPER	1	T563SAF APH
P2		F01025Y30BAP	PACKING CASE, PAPER	1	S563BF APH
P2		F01025Y30HAP	PACKING CASE, PAPER	1	S563WF APH
P2		F01025Y30SAP	PACKING CASE, PAPER	1	S563MF APH
P2		F01025Y40BAP	PACKING CASE, PAPER	1	S553BF APH
P2		F01025Y40HAP	PACKING CASE, PAPER	1	S553WF APH
P2		F01025W70BAP	PACKING CASE, PAPER	1	S543BF APH
P2		F01025W70HAP	PACKING CASE, PAPER	1	S543WF APH
P2		F01025W70BAPW	PACKING CASE, PAPER	1	S543BFW APH
P2		F01025Y70BAP	PACKING CASE, PAPER	1	S533BF APH
P2		F01025Y70HAP	PACKING CASE, PAPER	1	S533WF APH
P2		F01025Y60BAP	PACKING CASE, PAPER	1	S503BF APH
P2		F01025Y60HAP	PACKING CASE, PAPER	1	S503WF APH
P2		F01025Y00SCP	PACKING CASE, PAPER	1	T583SF CPH
P2		F01025Y30BCP	PACKING CASE, PAPER	1	S563BF CPH
P2		F01025Y30HCP	PACKING CASE, PAPER	1	S563WF CPH
P2		F01025Y30SCP	PACKING CASE, PAPER	1	S563MF CPH
P2		F01025Y70HCP	PACKING CASE, PAPER	1	S533WF CPH
P2		F01025Y80HCP	PACKING CASE, PAPER	1	S523WF CPH
P2		F01025Y90HCP	PACKING CASE, PAPER	1	S513WF CPH
P3		F01045T20RP	UPPER FILLER	1	
P4		F01055L00AP	LOWER FILLER	1	

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
P5		F01068100XN	P.E.BAG	1	
P6		F01078100XN	DOOR SHEET	1	
P7		F01085T20RP	TRAY PACKING	1	
P8		F06014T00AP	COOKING TRAY	1	
P9		F01924T00AP	SHEET	1	T***SF, T***SAF, S***BF, S***MF
P10		F00065G40AP	CAUTION LABEL	1	

12. DIGITAL PROGRAMMER CIRCUIT (NN-T583SF APH/CPH)

SCHEMATIC DIAGRAM

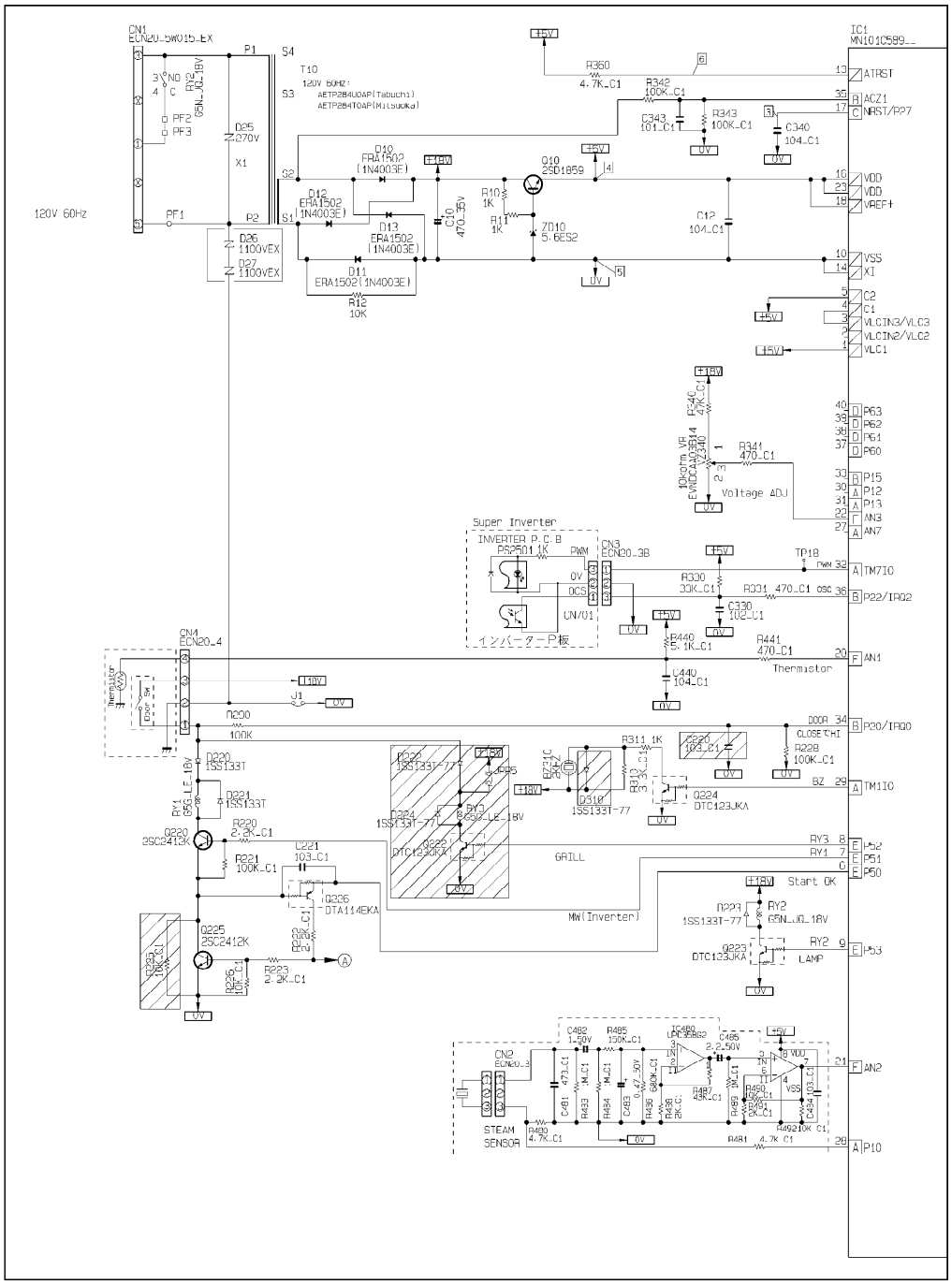

CN1
ECN20_5W015_EX
T10
120V 60HZ:
AETP284U0AP(Tabuchi)
AETP284T0AP(Mitsuoka)
IC1
MN101C54C
TP30
U10
ERA1502
(1N4003E)
U12
ERA1502
(1N4003E)
U13
ERA1502
(1N4003E)
D11
ERA1502
(1N4003F)
D25
270V
D26
1100VEX
D27
1100VEX
120V
PF1
X1
R342
100K_C1
C343
101_C1
R343
100K_C1
C340
104_C1
C12
104_C1
R10
1K
R11
1K
C10
470_35V
U10
2SD1859
U10
5.6ES2
R12
10K
CN2
FCN20_3
STEAM
SENSOR
C482
1.50V
R485
150K_C1
C485
2.2_50V
C481
473_C1
R483
1K_C1
R484
1K_C1
C483
0.47_50V
R486
82K_C1
R487
2K_C1
R488
1M_C1
C486
103_C1
C484
103_C1
R480
4.7K_C1
R481
4.7K_C1
R482
10K_C1
TNVPRTFR P.C.B
PS2501
1K
PWM
0V
OCS
CN701
CN3
ECN20_3B
R330
33K_C1
R331
470_C1
C330
102_C1
R440
5.1K_C1
R441
470_C1
C440
104_C1
CN4
ECN20_4
Thermistor
Door SW
J1
JPD5
R290
100K
D222
1SS133T-77
D224
1SS133T-77
RY3
G5C_LE_18V
RY1:Inverter/Fan
RY2:Lamp
RY3:Grill Heater
D220
1SS133T-77
RY2
G5N_JD_18V
D223
1SS133T-77
RY1
G5C_LE_18V
D221
1SS133T-77
D311
1K
VZ340
2KHZ
R310
3.3K_C1
D310
1SS133T-77
R360
4.7K_C1
D00R
CLOSE'CHI
R220
103_C1
R338
100K_C1
StartOK
Q222
DTC123JKA
GRILL
Q223
DTC123JKA
LAMP
Q224
DTC123JKA
BZ
MW(INVERTER)
Q220
2SC2412K
R220
2.2K_C1
R221
100K_C1
C221
103_C1
R227
22_C1
Q226
DTA114EKA
Q225
2SC2412K
R225
10K_C1
R222
10K_C1
R224
10K_C1
R223
2.2K_C1
R340
47K_C1
R341
470_C1
VZ3410KYA
Voltage ADJ
10KOHM VR
P21
RESET
VDD
VDD
VREF+
VDD
VSS
MMOD
XI
VREF-
AN0
PA2
P51
P23
AN3
Thermistor
NC
SEG29
SEG30
P20
XO
NATRST
C2
C1
VLC3
VLC2
VLC1
P22
P13
P15
P14
P52
P12
P53
AN1

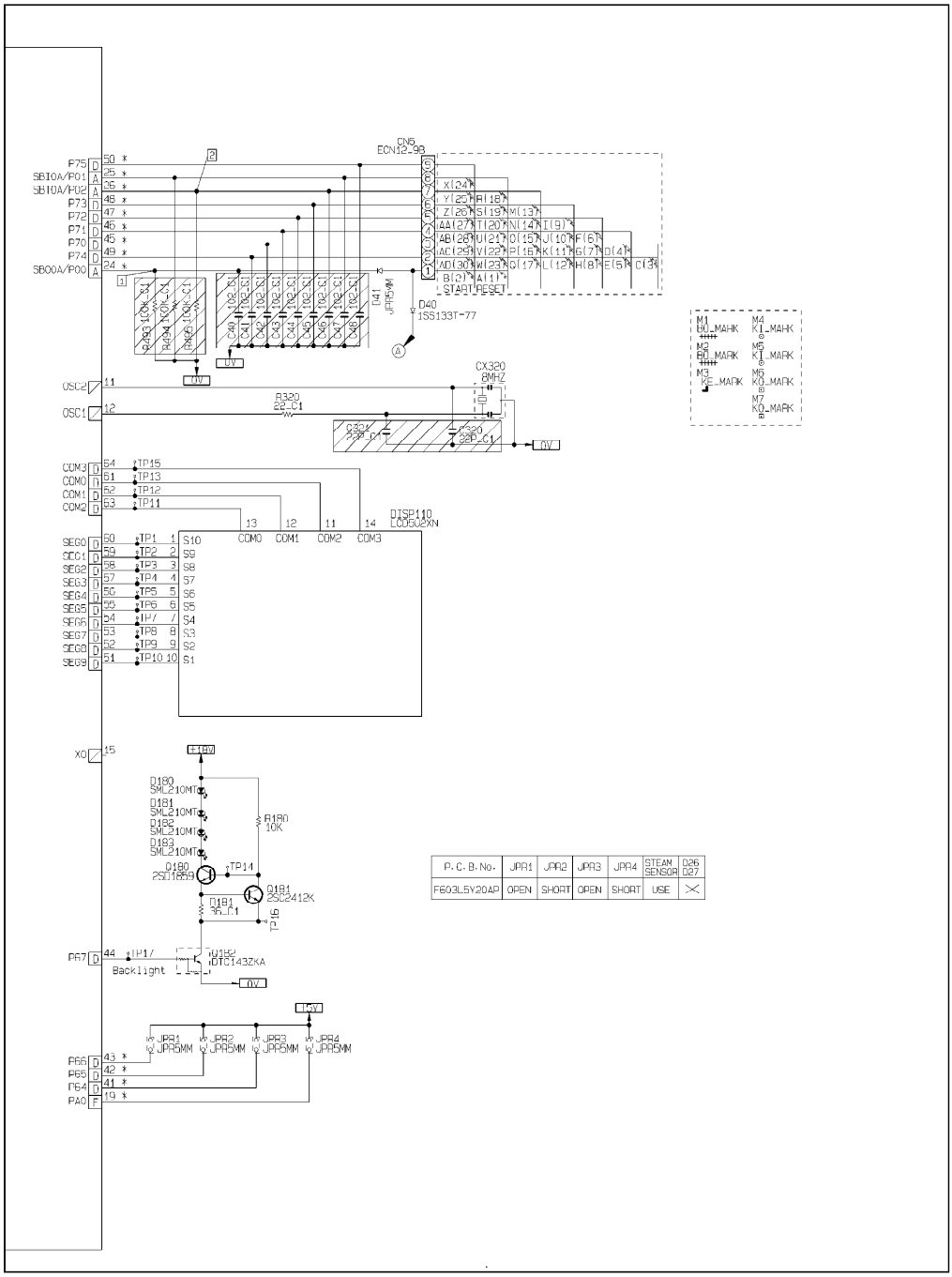


P.C.B.No.	JPR1	JPR2	JPR3	JPR4	STEAM SENSOR	D26 D27
F603L5Y00AP	OPEN	SHORT	OPEN	OPEN	USE	×
F603L5Y00CP	OPEN	OPEN	OPEN	SHORT	USE	USE

13. DIGITAL PROGRAMMER CIRCUIT (NN-T563SF APH, / NN-T563SAF APH)

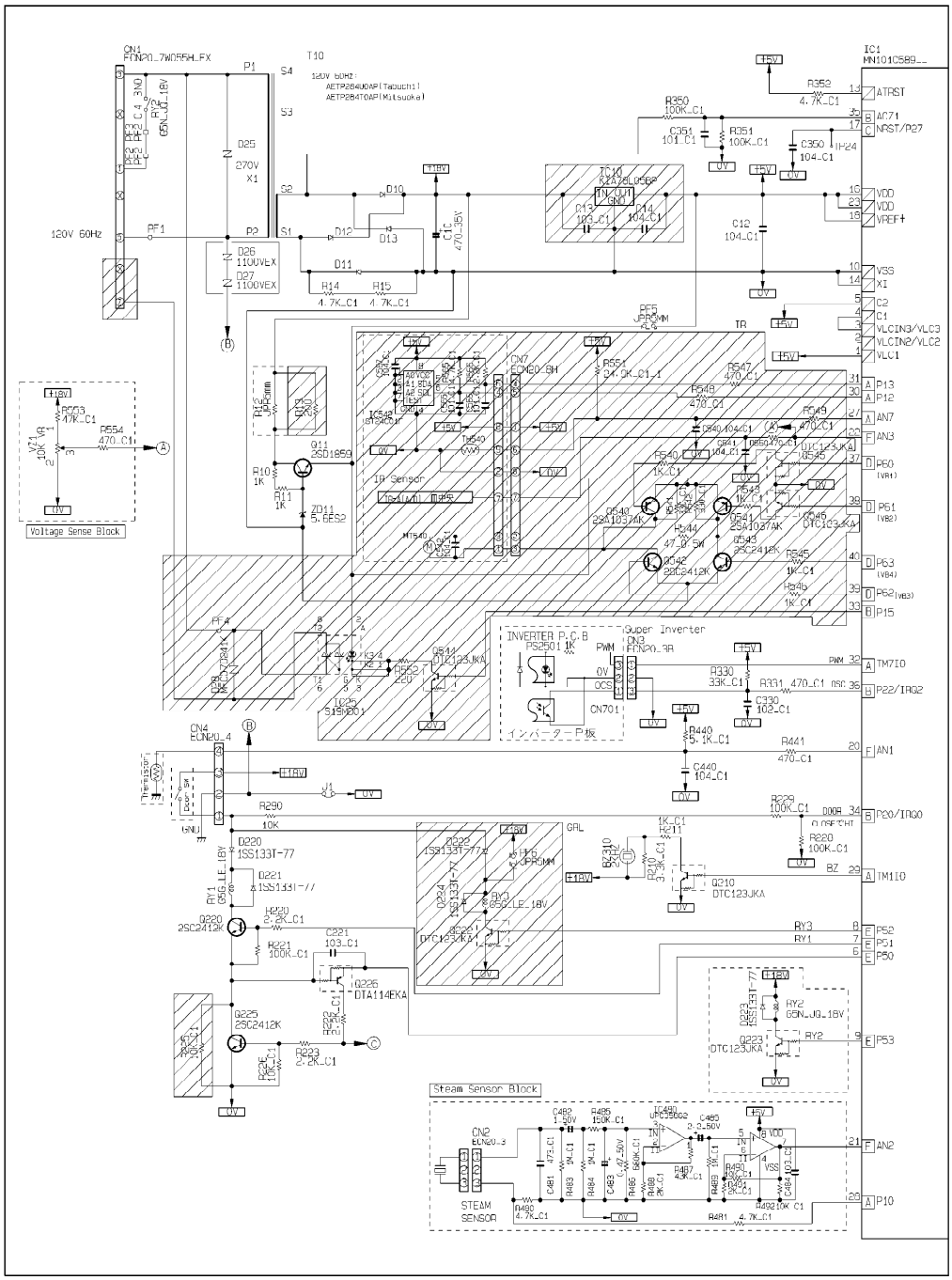
SCHEMATIC DIAGRAM

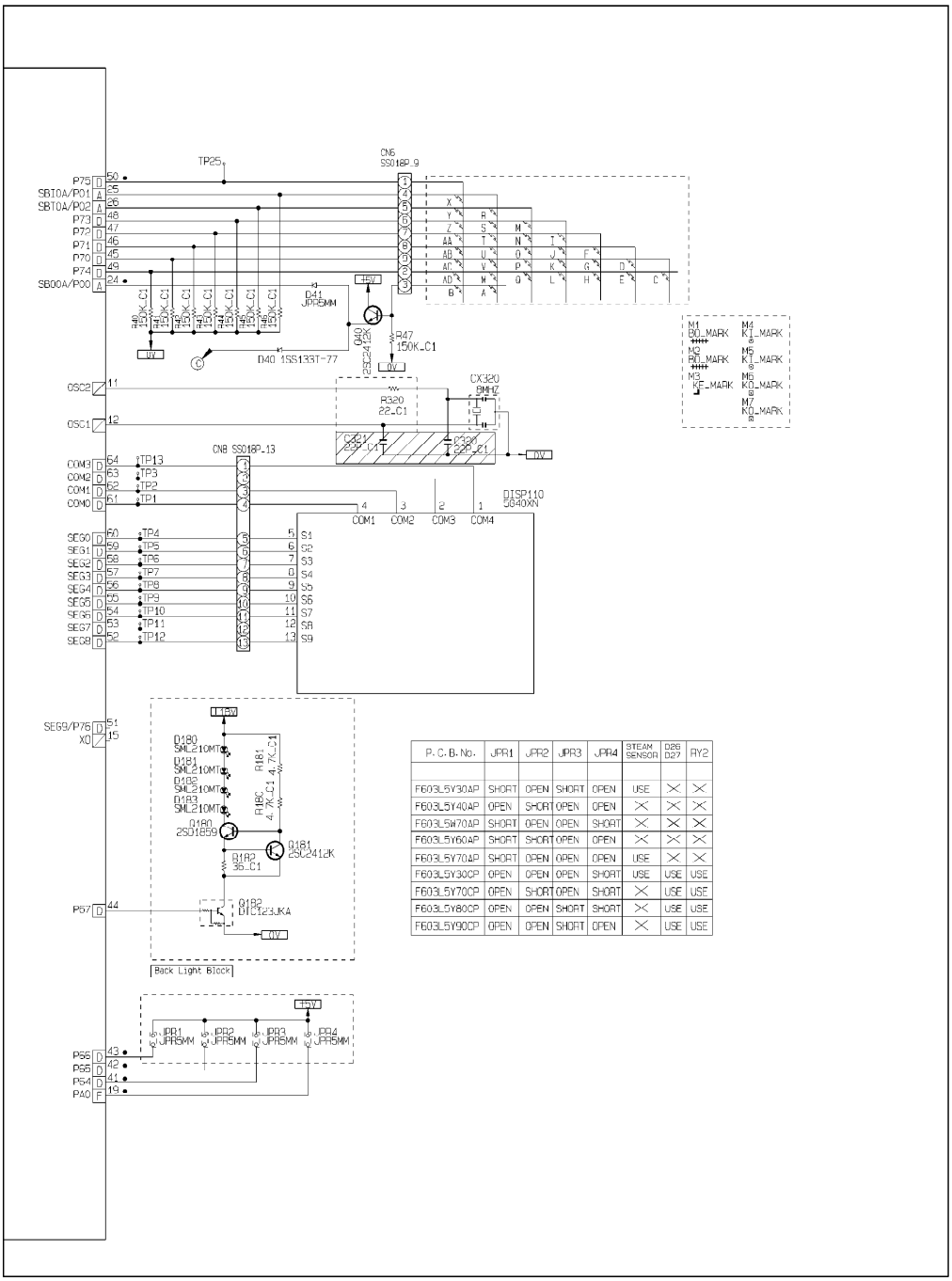

CN1
ECN2U-5W015-EX
IC1
MN1010599--
120V 60Hz
T10
120V 60Hz:
AETP284U0AP(Tabuchi)
AETP284T0AP(Mitsuoka)
+5V
+18V
0V
ATRST
ACZ1
NRST/P27
VDD
VDD
VREF+
VSS
XI
C2
C1
VLCIN3/VLC3
VLCIN2/VLC2
VLC1
P63
P62
P61
P60
P15
P12
P13
AN3
AN7
Voltage ADJ
Super Inverter
INVERTER P.C.B
CN3
ECN20-3B
TP18
TM7IO
P22/IRQ2
Thermistor
AN1
P20/IRQ0
DOOR
CLOSE'CHI
TM1IO
BZ
GRILL
MW(Inverter)
Start OK
LAMP
P52
P51
P50
P53
CN2
ECN20-3
STEAM
SENSOR
AN2
P10



14. DIGITAL PROGRAMMER CIRCUIT(NN-S*** APH/ CPH)

SCHEMATIC DIAGRAM


CN1
T10
IC1
MN101C589__
120V 60Hz
Voltage Sense Block
IR Sensor
INVERTER P.C.B
Super Inverter
Steam Sensor Block
STEAM SENSOR
ATRST
NRST/P27
VDD
VSS
XI
VLC1
P13
P12
AN7
AN3
P60
P61
P63
P62
P15
TM7IO
P22/IRQ2
AN1
P20/IRQ0
TM1IO
P52
P51
P50
P53
AN2
P10
+18V
+5V
0V



P.C.B.No.	JPR1	JPR2	JPR3	JPR4	STEAM SENSOR	D26 D27	RY2
F603L5Y30AP	SHORT	OPEN	SHORT	OPEN	USE	×	×
F603L5Y40AP	OPEN	SHORT	OPEN	OPEN	×	×	×
F603L5W70AP	SHORT	OPEN	OPEN	SHORT	×	×	×
F603L5Y60AP	SHORT	SHORT	OPEN	OPEN	×	×	×
F603L5Y70AP	SHORT	OPEN	OPEN	OPEN	USE	×	×
F603L5Y30CP	OPEN	OPEN	OPEN	SHORT	USE	USE	USE
F603L5Y70CP	OPEN	SHORT	OPEN	SHORT	×	USE	USE
F603L5Y80CP	OPEN	OPEN	SHORT	SHORT	×	USE	USE
F603L5Y90CP	OPEN	OPEN	SHORT	OPEN	×	USE	USE

15. DIGITAL PROGRAMMER CIRCUIT

PARTS LIST

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
BZ310		AEFBAT2001	BUZZER	1	2.0KHz
C221		AECUU06F103Z	CHIP CAPACITOR	1	0.01 μ F/50V
C484		AECUU06F103Z	CHIP CAPACITOR	1	0.01 μ F/50V (T*** APH/CPH, S563 APH/CPH, S533 APH)
C351		AECUU06C101J	CHIP CAPACITOR	1	100PF/50V (S*** APH/CPH)
C343		AECUU06C101J	CHIP CAPACITOR	1	100PF/50V (T*** APH/CPH)
C12, C440		AECUT06F104Z	CHIP CAPACITOR	2	0.1 μ F/25V
C350		AECUT06F104Z	CHIP CAPACITOR	1	0.1 μ F/25V (S*** APH/CPH)
C340		AECUT06F104Z	CHIP CAPACITOR	1	0.1 μ F/25V (T*** APH/CPH)
C330		AECUU06R102K	CHIP CAPACITOR	1	1000PF/50V
C481		AECUU06F473Z	CHIP CAPACITOR	1	0.047 μ F/50V (T*** APH/CPH, S563 APH/CPH, S533 APH)
C10		AECETK1V471B	AL CHEM CAPACITOR	1	470 μ F/35V
C482		AECETS1H010B	AL CHEM CAPACITOR	1	1 μ F/50V (T*** APH/CPH, S563 APH/CPH, S533 APH)
C483		AECETS1HR47B	AL CHEM CAPACITOR	1	0.47 μ F/50V (T*** APH/CPH, S563 APH/CPH, S533 APH)
C485		AECETS1H2R2B	AL CHEM CAPACITOR	1	2.2 μ F/50V (T*** APH/CPH, S563 APH/CPH, S533 APH)
CN1		AEEMXH01505W	CONNECTOR	1	5 Pin
CN2		AEEMMF00703W	CONNECTOR	1	3 Pin (T*** APH/CPH, S563 APH/CPH, S533 APH)
CN3		F03524U50AP	CONNECTOR	1	3 Pin
CN4		AEEMXH00F04W	CONNECTOR	1	4 Pin
CN6		AEEM09FDZBTM	CONNECTOR	1	9 Pin (T*** APH/CPH)
CX320		AEFOS800MG06	CERAMIC RESONATOR	1	8.0MHz
D10-D13		AESSRCT1A6-E	DIODE	4	
D40, D220, D221		AESS133T-77	DIODE	3	
D223		AESS133T-77	DIODE	1	(T*** APH/CPH)
DISP110		AEDDHJ4M00AP	LCD	1	(T583 APH/CPH)
DISP110		AEDDHJ5U20XN	LCD	1	(T563SF APH, T563SAF APH)
DISP1 HOLDER		F66175E40XN	LCD HOLDER	1	(T583 APH/CPH)
DISP1 HOLDER		F66174U20AP	LCD HOLDER	1	(T563SF APH, T563SAF APH)
		F67525E40XN	DIFFUSION SHEET	1	(T583 APH/CPH)
D25		AERZ271KD10A	VARSITOR	1	
D26, D27		AERZ102KD10A	VARSITOR	2	CPH
D180-D183		AESQPY1112H	CHIP-LED	4	
D184-D189		AESQPY1112H	CHIP-LED	6	(T583 APH/CPH)
IC1		MN101C54CEH	L.S.I	1	(T583 APH/CPH)
IC1		MN101C589EB	L.S.I	1	(T563SF APH, T563SAF APH)
IC1		MN101C589EA	L.S.I	1	(S*** APH/CPH)
IC480		AEICUPC358G2	IC	1	(T583 APH/CPH, S563 APH/CPH, S533 APH)
Q226		AESA14EKE	CHIP DIGI-TRANSISTOR	1	
Q182		AESC23JKE	CHIP DIGI-TRANSISTOR	1	
Q210		AESC23JKE	CHIP DIGI-TRANSISTOR	1	(S*** APH/CPH)
Q223, Q224		AESC23JKE	CHIP DIGI-TRANSISTOR	2	(T*** APH/CPH)
Q11, Q180		2SD1859TV2Q	TRANSISTOR	2	
Q181, Q220, Q225		2SC2412KT146	CHIP TRANSISTOR	3	
Q40		2SC2412KT146	CHIP TRANSISTOR	1	(S*** APH/CPH)
R182, R183		AERJ06J101R	CHIP RESISTOR	2	1K, 1/16W, 5% (T583 APH/CPH)
R211		AERJ06J102R	CHIP RESISTOR	1	1K, 1/16W, 5% (S***APH/CPH)
R226		AERJ06J103R	CHIP RESISTOR	1	10K, 1/16W, 5% (T563SF APH, T563SAF APH, S*** APH/CPH)
R224		AERJ06J103R	CHIP RESISTOR	1	10K, 1/16W, 5% (T583 APH/CPH)

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
R490, R492		AERJ06J103R	CHIP RESISTOR	2	10K, 1/16W, 5% (T583 APH/CPH, S563 APH/CPH, S533 APH)
R221, R228		AERJ06J104R	CHIP RESISTOR	2	100K, 1/16W, 5%
R229, R350, R351		AERJ06J104R	CHIP RESISTOR	3	100K, 1/16W, 5% (S*** APH/CPH)
R342, R343		AERJ06J104R	CHIP RESISTOR	2	100K, 1/16W, 5% (T*** APH/CPH)
R483, R484, R489		AERJ06J105R	CHIP RESISTOR	3	1M, 1/16W, 5% (T*** APH/CPH, S563 APH/CPH, S533 APH)
R40-R47		AERJ06J154R	CHIP RESISTOR	8	150K, 1/16W, 5% (S*** APH/CPH)
R485		AERJ06J154R	CHIP RESISTOR	1	150K, 1/16W, 5% (T*** APH/CPH, S563 APH/CPH, S533 APH)
R488, R491		AERJ06J202R	CHIP RESISTOR	2	2K, 1/16W, 5% (T*** APH/CPH, S563 APH/CPH, S533 APH)
R320		AERJ06J220R	CHIP RESISTOR	1	22 Ω, 1/16W, 5%
R181, R227		AERJ06J220R	CHIP RESISTOR	2	22 Ω, 1/16W, 5% (T583 APH/CPH)
R220, R222, R223		AERJ06J222R	CHIP RESISTOR	3	2.2K, 1/16W, 5%
R210		AERJ06J332R	CHIP RESISTOR	1	3.3K, 1/16W, 5% (S*** APH/CPH)
R310		AERJ06J332R	CHIP RESISTOR	1	3.3K, 1/16W, 5% (T*** APH/CPH)
R330		AERJ06J333R	CHIP RESISTOR	1	33K, 1/16W, 5%
R182		AERJ06J360R	CHIP RESISTOR	1	36 Ω, 1/16W, 5% (S*** APH/CPH)
R487		AERJ06J433R	CHIP RESISTOR	1	43K, 1/16W, 5% (T*** APH/CPH, S563 APH/CPH, S533 APH)
R331, R441		AERJ06J471R	CHIP RESISTOR	2	470 Ω, 1/16W, 5%
R554		AERJ06J471R	CHIP RESISTOR	1	470 Ω, 1/16W, 5% (S*** APH/CPH)
R341		AERJ06J471R	CHIP RESISTOR	1	470 Ω, 1/16W, 5% (T*** APH/CPH)
R14, R15, R180, R181, R352		AERJ06J472R	CHIP RESISTOR	5	4.7K, 1/16W, 5% (S*** APH/CPH)
R480, R481		AERJ06J472R	CHIP RESISTOR	2	4.7K, 1/16W, 5% (T*** APH/CPH, S563 APH/CPH, S533 APH)
R360		AERJ06J472R	CHIP RESISTOR	1	4.7K, 1/16W, 5% (T*** APH/CPH)
R553		AERJ06J473R	CHIP RESISTOR	1	47K, 1/16W, 5% (S*** APH/CPH)
R340		AERJ06J473R	CHIP RESISTOR	1	47K, 1/16W, 5% (T*** APH/CPH)
R440		AERJ06J512R	CHIP RESISTOR	1	5.1K, 1/16W, 5%
R486		AERJ06J684R	CHIP RESISTOR	1	680K, 1/16W, 5% (T*** APH/CPH, S563 APH/CPH, S533 APH)
R10, R11		AERDY2TJ102T	CARBON RESISTOR	2	1K, 1/4W, 5%
R290		AERDY2TJ103T	CARBON RESISTOR	1	10K, 1/4W, 5% (S*** APH/CPH)
R12, R180		AERDY2TJ103T	CARBON RESISTOR	2	10K, 1/4W, 5% (T*** APH/CPH)
R290		AERDY2TJ104T	CARBON RESISTOR	1	100K, 1/4W, 5% (T*** APH/CPH)
VZ1		AEVNNV6TL103	VARISTOR	1	10K Ω (S*** APH/CPH)
VZ340		AEVNNV6TL103	VARISTOR	1	10K Ω (T*** APH/CPH)
RY1		AEGG5G1A18	POWER RELAY	1	
RY2		AEBJQ1A18	POWER RELAY	1	(CPH, T*** APH/CPH)
T10		AETP284U0AP	LOW VOLTAGE TRANSFORMER	1	
ZD10		AESZMTZJ5R6B	ZENER DIODE	1	(T*** APH/CPH)
ZD11		AESZMTZJ5R6B	ZENER DIODE	1	(S*** APH/CPH)

01/03 / S-5V5, S-5W7 / S-5Y0, S-5Y2 / S-5Y3, S-5Y4 / S-5Y6, S-5Y7 / S-5Y8, S-5Y9 / Printed in China

ORDER NO. SIMMC 0001002C1
E1

Service Manual

Microwave Oven

MODELS	APH	CPH
	USA	Canada
NN-S560BF/WF	O	O
NN-S550BF/WF	O	O
NN-S540BF/WF	O	
NN-L530BF	O	
NN-L530WF	O	O
NN-L520WF		O
NN-S510WF		O

* **RPH Model refer to the last page.**

Specifications for APH :

Specifications: / Model:	NN-S560BF/WF	NN-S550BF/WF	NN-S540BF/WF	NN-L530BF/WF
Power Source:	*120V AC Single Phase, 60Hz			
Power Requirement:	1370W	1370W	1370W	1370W
Output(IEC705-88):	1300W	1300W	1100W	1000W
Microwave Frequency:	*2450MHz			
Timer:	*99min.99sec			
Outside Dimensions:	*20 ”(518mm)(W)◦ × 16 ”(407mm)(D)◦ × 11”(301mm)(H)			
Oven Cavity Dimensions:	*14 ”(375mm)(W)◦ × 15 ”(386mm)(D)◦ × 8 ”(225mm)(H)			
Weight:	*26.5 lbs. (12.0kg)			
Output power:IEC705-88 Test Procedure				
Specifications subject to change without notice.				

Specifications for CPH:

Specifications: / Model:	NN-S560BF/WF	NN-S540BF/WF	NN-L530WF	NN-L520WF	NN-S510WF
Power Source:	*120V AC Single Phase, 60Hz				
Power Requirement:	1370W	1370W	1370W	1370W	1370W
Output(IEC705-88):	1200W	1100W	1100W	1100W	1000W
Microwave Frequency:	*2450MHz				
Timer:	*99min.99sec				
Outside Dimensions:	*20 ”(518mm)(W)◦ × 16 ”(407mm)(D)◦ × 11”(301mm)(H)				
Oven Cavity Dimensions:	*14 ”(375mm)(W)◦ × 15 ”(386mm)(D)◦ × 8 ”(225mm)(H)				
Weight:	*26.5 lbs. (12.0kg)				
Output power:IEC705-88 Test Procedure					
Specifications subject to change without notice.					

Panasonic®

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

WARNING

1. This product should be serviced only by trained, qualified personnel.
2. Though this product has been manufactured in compliance with:
   "Federal Performance Standard 21 CFR Subchapter J"(D.H.H.S): U.S.A. models
   or "Radiation Emitting Devices Act"(Health and Welfare Canada): Canadian models
   it is very important all repairs should be made in accordance with procedures described in this manual to avoid being exposed to excessive microwave radiation.
3. Check for radiation leakage before and after every servicing according to the "procedure for measuring radiation leakage."
4. If the unit cannot be repaired on site, advise the customer not to use until unit is repaired.
5. Any serviceman who learns of any accident pertaining to microwave radiation leakage including the oven operating with open door should immediately notify the appropriate address listed below and Center for Devices and Radiological Health, DHHS.

IN U.S.A. (PASC)	Panasonic Services Company 50 Meadowland Parkway, Secaucus, New Jersey 07094 Attention: Technical Service Division. (201)348-7000	IN PUERTO RICO (PSC)	PSC San Gabriel Industrial Park 65th Infantry Ave. Km.9.5 Carolina, Puerto Rico 00985 (787)750-4300
		IN CANADA (PCI)	Panasonic Canada Inc. 5770 Ambler Drive, Mississauga, Ontario, L4W2T3 (905)624-5010

6. There are special components used in the microwave oven which are important for safety. These parts are marked with a ⚠ on the replacement parts list. It is essential that these critical parts should be replaced only with the manufacture's specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the orginal design.

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

(A) Do not operate or allow the oven to be operated with the door open.
(B) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
   (1) Interlock operation
   (2) Proper door closing
   (3) Seal and sealing surfaces (arcing, wear, and other damage)
   (4) Damage to or loosening of hinges and latches.
   (5) Evidence of dropping or abuse
(C) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, waveguide or transmission line, and cavity for proper alignment, integrity and connections.
(D) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.
(E) A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

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DANGER OF HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LIVE) OF THE INVERTER POWER SUPPLY (U)

INVERTER WARNING

This Inverter board looks like a regular PCB. However, this PCB drives the magnetron tube with extremely high voltage and high current. **NEW HV**

IT HAS:

1. **Very high voltage and high current circuits.**
   It functions the same as the high voltage transformer and high voltage capacitor in ordinary microwave ovens.
2. **Aluminum heat sink is energized with very high voltages and high heat energy.**
3. **Very high voltage may remain in circuitry even when oven is off. High voltage may remain in the capacitors on the board.**

DO NOT:

* 1. **Do not touch circuitry because it has very hot (high voltage) circuitry. Even when replacing board, extreme care should be taken to avoid possible electric shock hazards. High voltage may remain in circuit.**

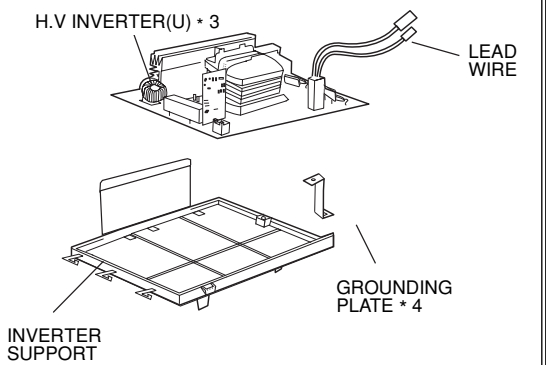
* 2. **Do not touch aluminum heat sink because it is very hot in high voltage and also very hot in high heat energy.**

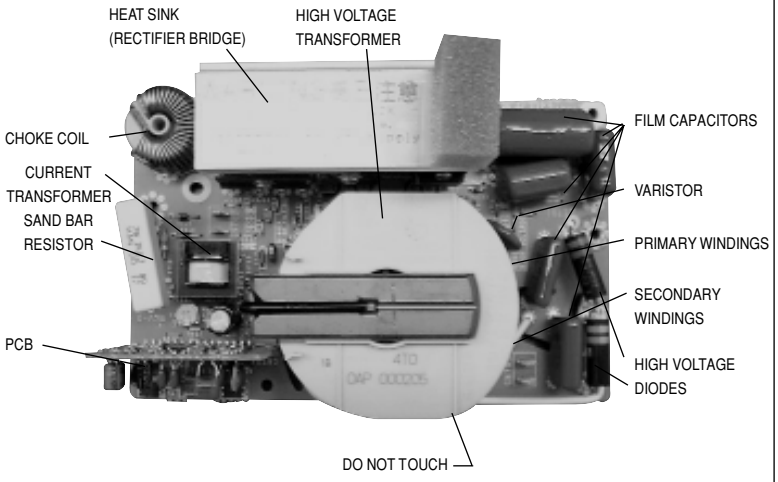
* 3. **Do not try to adjust or tamper with preset volume on the Inverter board because it is very dangerous to adjust without proper test equipment.**

* 4. **Do not test oven while Inverter grounding plate or screws are loose. It is very dangerous to operate H.V. Inverter Circuit (U) with loose mounting screws or if improperly grounded.**

* 5. **For USA only:**
   Do not try to repair Inverter PCB because it is very dangerous to repair it. Replace as whole High Voltage Inverter Circuit unit and return fully re-packed with original shipping box and shipping materials.

INVERTER POWER SUPPLY DIAGRAM



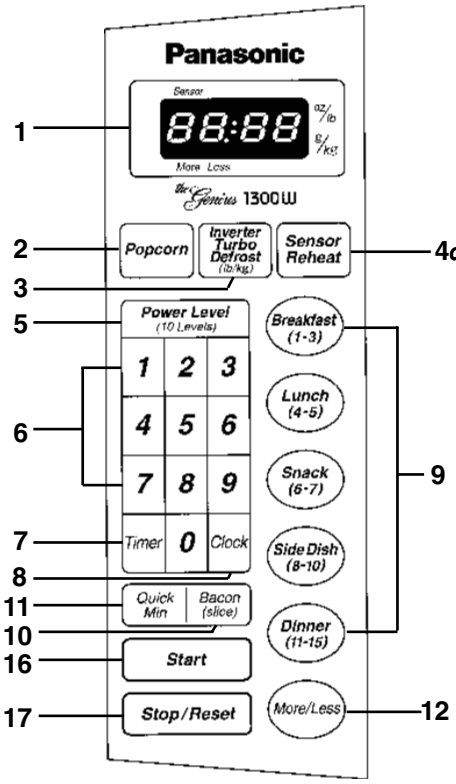


FEATURE CHART

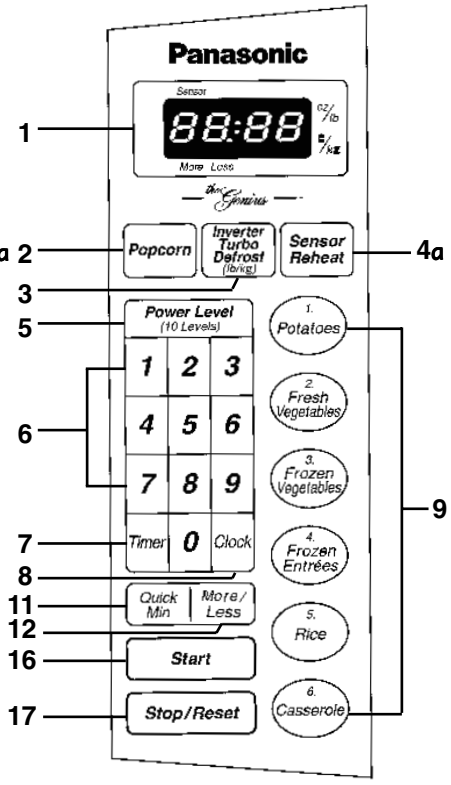
FEATURE \ MODEL	NN-S560WF	NN-S550WF NN-S540WF NN-S510WF NN-S530WF NN-S520WF
Three Stage Cooking	○	○
Inverter Turbo Defrost	○	○
Auto Reheat	—	○
Inverter Auto Cook	—	○
Sensor Reheat	○	—
Sensor Cook	○	—
Quick Min	○	○
Popcorn	○	○
Timer	○	○
Digital Clock	○	○

CONTROL PANEL

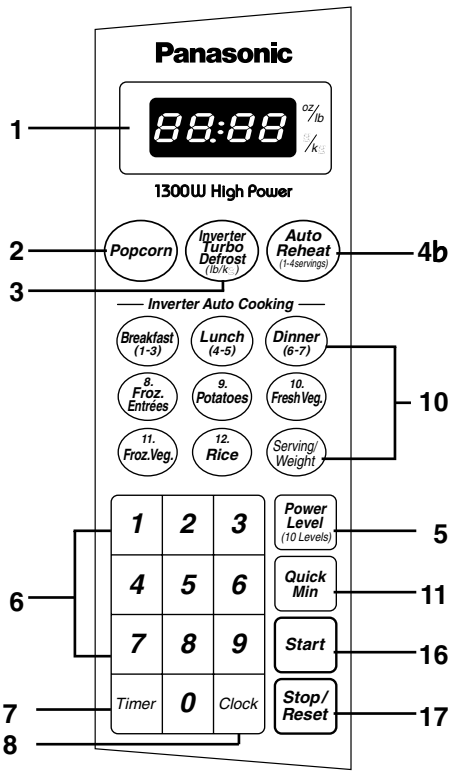
NN-S560(APH)



NN-S560(CPH)

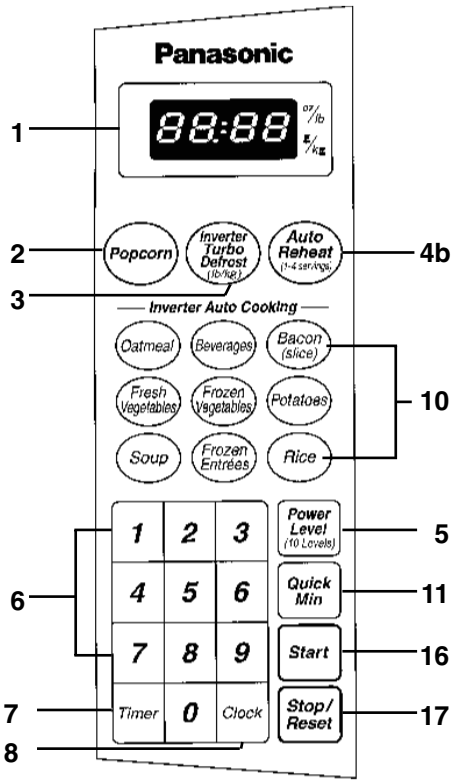


NN-S550

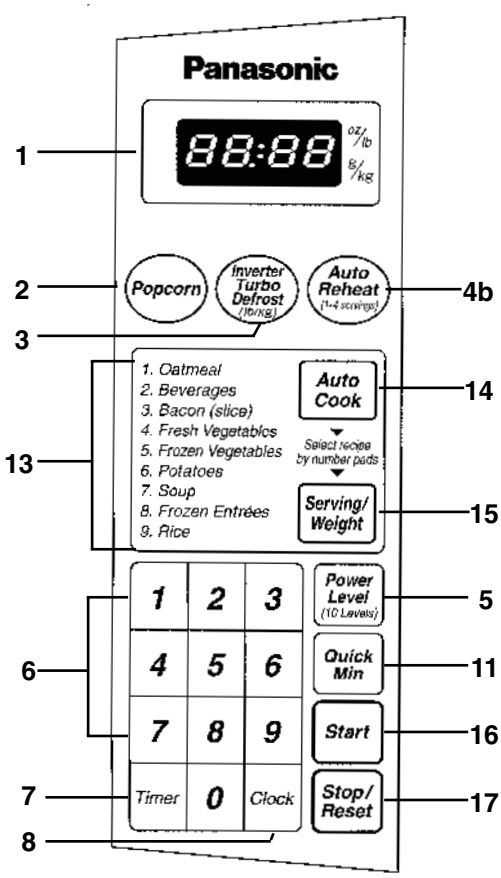


CONTROL PANEL

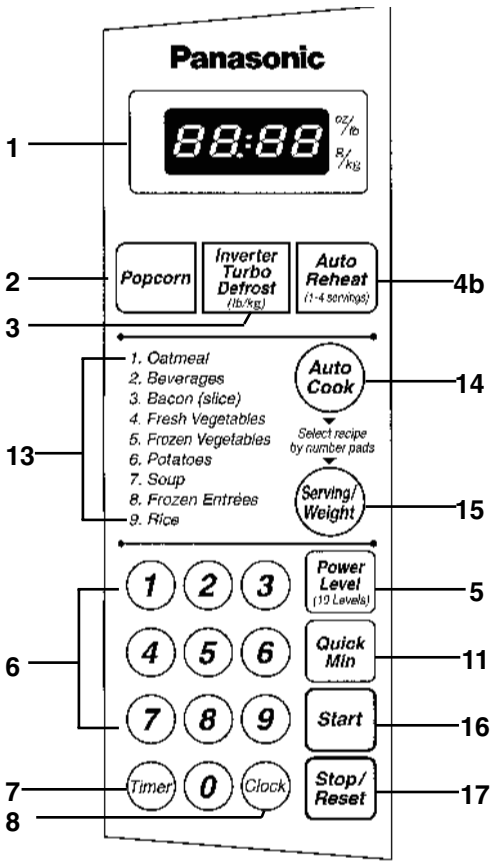
NN-S540



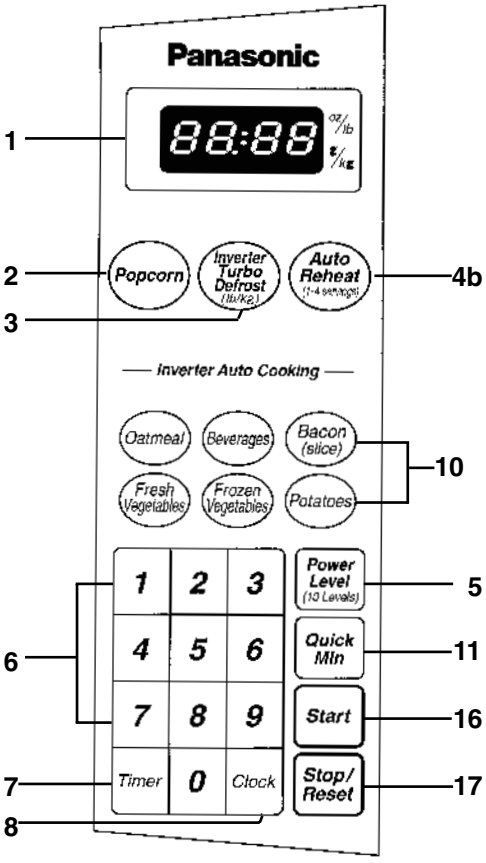
NN-L530



NN-L520



MN-S510



(1) Display Windows
(2) Popcorn Pad
(3) Inverter Turbo Defrost Pad
(4a) Sensor Reheat Pad
(4b) Auto Reheat Pad
(5) Power Level Pad
(6) Number Pads
(7) Timer Pad
(8) Clock Pad
(9) Sensor Cook Pad
(10) Inverter Auto Cooking Pads
(11) Quick Min Pad
(12) More /Less Pad
(13) Cooking Guide
(14) Auto Cook Pad
(15) Serving/Weight Pad
(16) Start Pad

One tap allows oven to begin functioning. If door is opened or STOP/RESET Pad is pressed once during oven operation, START Pad must again be pressed to restart oven.

(17) Stop/Reset Pad

Before cooking: One tap clears your instructions.
During cooking: One tap temporarily stops the cooking process. Another tap cancels all your instructions and time of day or colon appears on the display window.

OPERATION AND DIGITAL PROGRAMMER CIRCUIT TEST PROCEDURE

When you pluge the power supply cord into the wall outlet, microwave oven automatically enter into the state of lb / oz. If you want to use g / kg state, please press **Start** pad after pluging the power source.

1. To Set Clock

OPERATION	SCROLL DISPLAY
1. Plug the power supply cord into wall outlet.	88.88
2. Press **Clock** pad.	☼ ☼
3. Enter time of day (TOD) by pressing appropriate **Number** pads.	11☼25
4. Press **Clock** pad. TOD has now been resistered into the digital programmer circuit and will count up by minutes.	11. 25

2. Time Cooking for Two Stage

OPERATION	SCROLL DISPLAY
1. Place a water load in the oven.	
2. Press **Power Level** pad once to set High power. (1st stage)	P 10
3. Set for 5 seconds by pressing **Number** pads. 5 sec.= **5**	. 5
4. Press **Power Level** pad 6 times to set Medium power. (2nd stage)	P 5
5. Set for 1 minute by pressing **Number** pads. 1 min.= **1** **0** **0**	1.00
6. Press **Start** pad.	. 5
7. When 1st stage cooking time has elapsed. Oven beeps twice and automatically switches to 2nd stage cooking.	1.00
8. When 2nd stage cooking time has elapsed, oven beeps 5 times and shuts off.	Time of day or colon if set appears in the display.

3. Inverter Turbo Defrost

OPERATION	SCROLL DISPLAY
1. Press **Inverter Turbo Defrost** pad.	– ☼
2. Set the weight for 1 lb by pressing **Number** pads. 1 lb = **1** **0**	1.0 –
3. Press **Start** Pad.	4.23
4. Press **Stop/Reset** Pad twice. Oven shuts off.	Time of day or colon if set appears in the display.

4. Inverter Auto Cooking

OPERATION	SCROLL DISPLAY
1. Press **Rice** pad twice.	1
2. Press **Start** pad. Cooking begins as time counts down.	15.00
3. When cooking time has elapsed, oven beeps 5 times and shuts off.	Time of day or colon if set appers in the display.

5. Auto Cook

OPERATION	SCROLL DISPLAY
1. Press **Auto Cook** pad.	
2. Press **Number** pads. (Press 3 to select Bacon)	3

OPERATION	SCROLL DISPLAY
3. Press **Serving / Weight** pad. (Select 4. 6. 10. 14 slices)	***4***
4. Press **Start** pad.	***4.10***
When cooking time has elapsed, Oven beeps 5 times and shuts off.	Times of day or colon if set appears in the display.

6. Popcorn

OPERATION	SCROLL DISPLAY
1. Press **Popcom** pad five times for 3.5 oz serving. (Select 1.75. 2.65. 2.85. 3.0 or 3.5 oz)	***3.5***
2. Press **Start** pad. Cooking begin as times counts down.	***1.45***
When cooking time has elapsed, Oven beeps 5 times and shuts off.	Time of day or colon if set appears in the display.

7. Sensor Cooking (NN-S560WFAPH/CPH,S560BFAPH/CPH)

OPERATION	SCROLL DISPLAY
1. Pour 150 ± 15cc (4.5 ± 1/2 ozs) of room temperature water in a beaker, place the beaker in the center of the oven. Press **Breakfast** pad twice.	***– 2***
2. Press **Start** pad.	
3.The steam sensor detects steam about 1.5 to 4 minutes after the start pad is pressed. Sensor cooking (T1) automatically switches to cooking time(T2). "Sensor" disappears with beep sounds and the remainder of cooking time appears in the display window. NOTE: Cooking time will vary depending on the water temperature, the shape of the beaker or the Power source Voltage.	
4.When cooking time has elapsed, Oven beeps 5 times and shuts off.	Time of day or colon if set appears in the display.

8. Auto Reheat

OPERATION	SCROLL DISPLAY
1. Press **Auto Reheat** pad twice for two servings.	***2***
2. Press **Start** pad.Auto Reheat cycle begins time counts down.	***2.00***
3.When cooking time has elapsed, Oven beeps 5 times and shuts off.	Time of day or colon if set appears in the display.

9. Power Level

Press Power Level	Power Level	Display Window
once	P 10 (HIGH)	P 10
twics	P 9	P 9
3 times	P 8	P 8
4 times	P 7 (MED. HIGH)	P 7
5 times	P 6 (MEDIUM)	P 6
6 times	P 5	P 5
7 times	P 4	P 4
8 times	P 3 (MEDIUM-LOW)	P 3
9 times	P 2	P 2
10 times	P 1 (LOW)	P 1

10. To set Child satety Lock

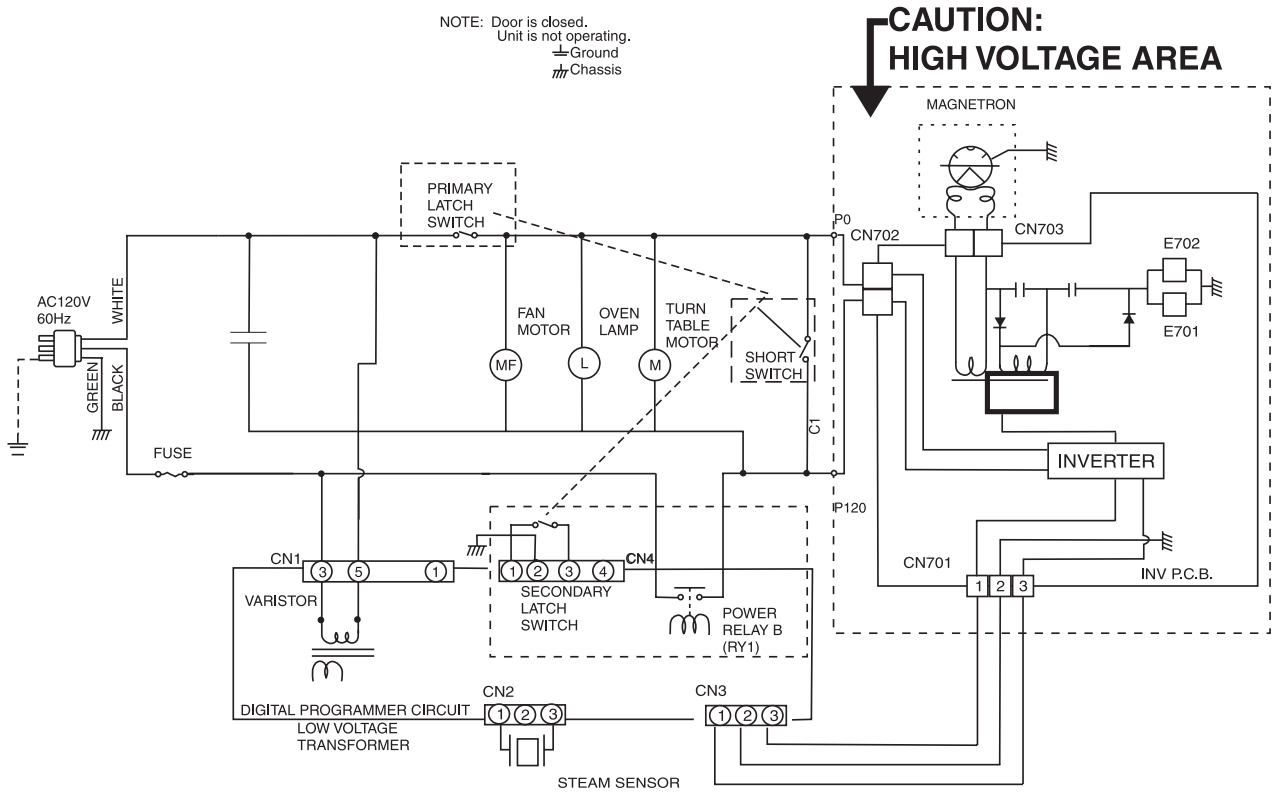
OPERATION	SCROLL DISPLAY
1. Press **Start** pad 3 times continuously. "Child" appears in the display.	***Child***

11. To Reset Child Lock

OPERATION	SCROLL DISPLAY
1. Press **Start / Reset** pad 3 times continuously.	Time of day or colon if set appears in the display.

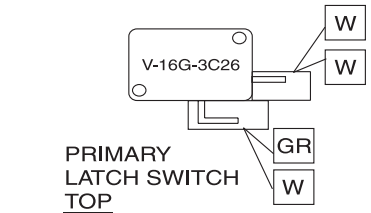
SCHEMATIC DIAGRAM (APH)

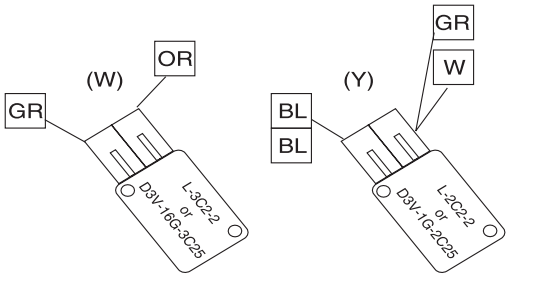
SCHEMATIC DIAGRAM (APH)

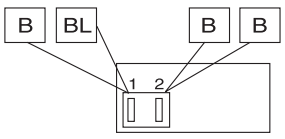


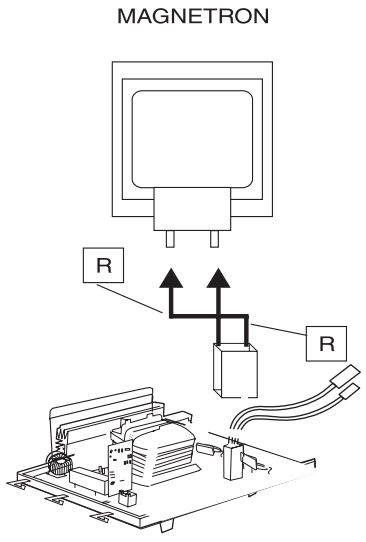
WIRING DIAGRAM (APH)

NOTE: * When replacing, check the lead wire color as shown.
***Colors shown by ( ) indicate colors of lead wire connector housing.**





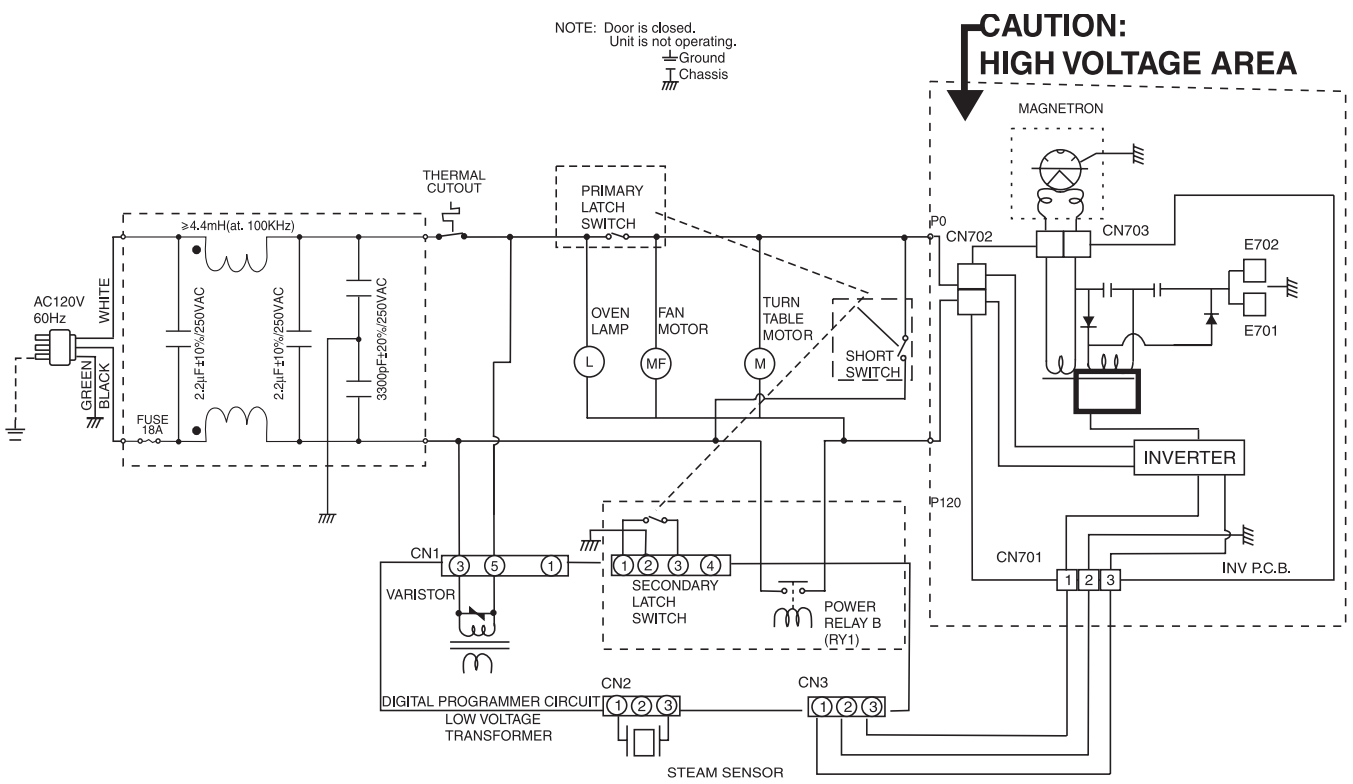




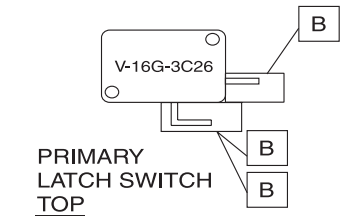
SYMBOL	COLOR
OR	ORANGE
BL	BLUE
BR	BROWN
W	WHITE
Y	YELLOW
R	RED
GR	GRAY
B	BLACK

SCHEMATIC DIAGRAM (CPH)

SCHEMATIC DIAGRAM (CPH)

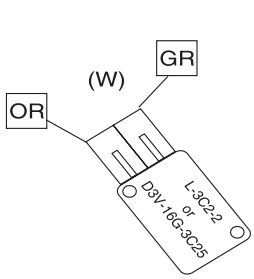


WIRING DIAGRAM (CPH)

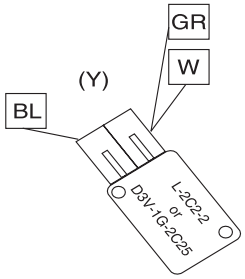


PRIMARY LATCH SWITCH TOP

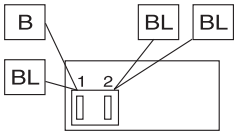
NOTE: * When replacing, check the lead wire color as shown.
***Colors shown by ( ) indicate colors of lead wire connector housing.**

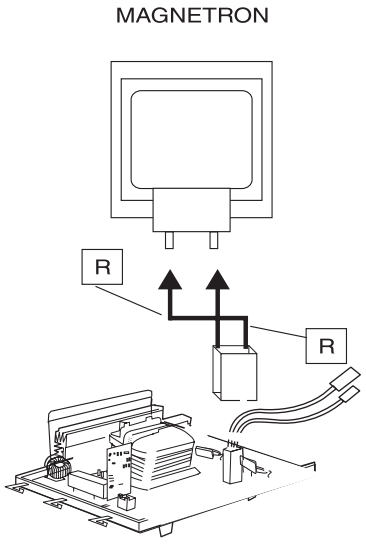


SECONDARY LATCH SWITCH BOTTOM (OUTSIDE)



SHORT LATCH SWITCH BOTTOM (INSIDE)





HIGH VOLTAGE INVERTER

SYMBOL	COLOR
OR	ORANGE
BL	BLUE
BR	BROWN
W	WHITE
Y	YELLOW
R	RED
GR	GRAY
B	BLACK

DESCRIPTION OF OPERATING SEQUENCE

1. Variable power cooking control

The coil of power relay B (RY1) is energized intermittently by the digital programmer circuit, when the oven is set at any power selection except for High power position. The digital programmer circuit controls the ON-OFF time of power relay B contacts in order to vary the output power of the microwave oven from "Low" to "High" power. One complete ON and OFF cycle of power relay B is 22 seconds. The relation between indications on the control panel and the output of the microwave oven is as shown in table.

NOTE: The ON/OFF time ratio does not correspond with the percentage of microwave power since approximately 2 seconds are required for heating of magnetron filament.

2. Inverter Power Supply Circuit NEW H,V

This Inverter Power Supply Circuit supplies 4,000V DC to the magnetron tube from the line voltage,120v 60Hz AC input. functions as the H.V. transformer, the H.V.capacitor and H.V.Diode.

1. The AC input voLtage 120V 60HZ is rectified to DC voltage immediately.
2. DC voltage will be supplied to the switching devices called IGBT. These devices will be switched ON-OFF by the 20 to 40 kHz PWM. (pulse width modulation) signal from the microcomputer in the DPC.
3. This drives the High voltage transformer to increase up to 2,000V AC and approximately 3V AC by means of transformer.
4. Then the half-wave doubler voltage rectifier circuit, consisting of the HV diodes and Capacitors, generates the necessary 4,000V DC needed for the magnetron.
5. Output power of the magnetron tube is always monitored by the signal output from the current transformer built into the inverter ciruit.
6. Then this signal will be fed back to the microcomputer in the DPC to determine operating conditions and output necessary to control PWM signal to the inverter Power Supply to control output power.

3. Inverter Turbo Defrost

When this Auto Control feature is selected and the Start Pad is tapped:

(A) The digital programer circuit determines the power level and cooking time to complete cooking and indicates the operating state in the display window. Table shows the corresponding cooking times for respective serving by categories.

(B) When cooking time the display window has elapsed, the oven tums off automatically by a control signal from the digital programmer circuit.

Variable Power Cooking

POWER SETTING		OUTPUT POWER(%) APPROX.	ON-OFF TIME OF POWER RELAY B (RY1)	
			ON (SEC)	OFF (SEC)
HIGH	P10	100%	22	0
	P9	90%	22	0
	P8	80%	22	0
MEDIUM-HIGH	P7	70%	22	0
MEDIUM	P6	60%	22	0
	P5	50%	22	0
	P4	40%	22	0
MEDIUM-LOW	P3	30%	22	0
	P2	20%	15	7
	P1	10%	8	14
DEFROST	P3	30%	22	0

Inverter Turbo Defrost

SELECTED WEIGHT	COOKING TIME
1.0LB	4 min.28 sec.
6.0LB	25 min.00 sec.

4. Sensor Cooking (NN-S560BFAPH/CPH NN-S560WFAPH/CPH)

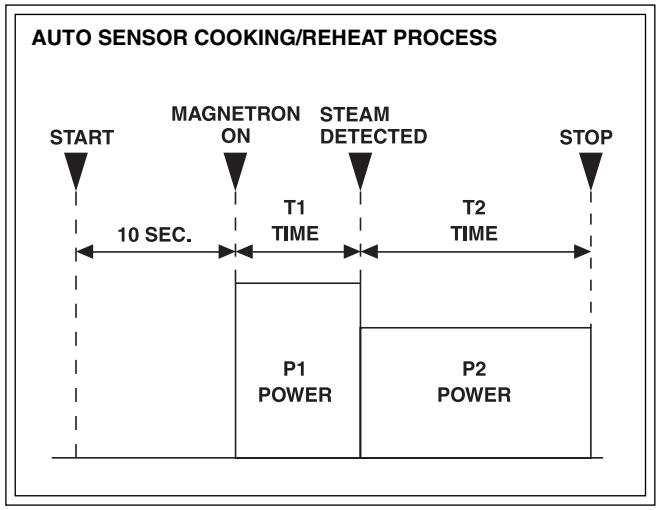
Auto sensor cooking is a revolutionary way to cook by microwave without setting a power level or selecting a time.

All that is necessary is to select an Auto Sensor Program before starting to cook.

Understanding Auto Sensor Cooking

As the food cooks, a certain amount of steam is produced. If the food is covered, this steam builds up and eventually escapes from the container. In Auto Sensor Cooking, a carefully designed instrument, called the steam sensor element, senses this escape of steam. Then, based upon the Auto Sensor Program Selected, the unit will automatically determine the correct power level and the proper length of time it will take to cook the food.

NOTE: Auto Sensor Cooking is successful with the foods and recipes found in the Auto Sensor Cooking Guide. Because of the vast differences in food composition, items not mentioned in the Cooking Guide should be prepared in the microwave oven using power select and time features. Please consult variable Power Microwave cookbook for procedures.



Explanation of the Auto Sensor Cooking process

1) During the first 10 second period there is no microwave activity, and when calculating the T2 time by using the formula below make sure this 10 second is subtracted from the T1 time. In other words T1 time starts at the end of the 10 second period.
2) T1 time... The total amount of time it takes the microwave oven to switch to T2 time after the 10 second period.
3) T2 time... When the steam escapes from the cooking container placed in the oven, the steam sensor detects it and the microprocessor calculates the balance of cooking time. This T2 time is then shown in the display and begins counting down.

   Balance of cooking time (T2 time)

   The balance of cooking time which is called T2 time, can be calculated by the following formula.

   T2 time (in sec.)=T1 time X K factor

NOTE: Remember, the T1 time starts after the 10 second period. The coefficient K is programmed Into the mIcroprocessor memory and they are listed in the following tables along with the P1 and P2 powers.

NOTE: When "More" or "Less" pad is selected, the K factor varles resulting In T2 time to be increased or decreased.

Example of calculating the T2 time

Example 1: If the T1 time is measured to be 2 minutes and 40 seconds after the 10 second period, and the Auto program selected is Frozen Vegetable:

T2 = T1 X K

=2 min. and 40 sec. X 0.1

=160 sec. X 0.1

=16 sec.

Sensor Cooking

Category	P1 Power	P2 Power	K Factor Standard
Frozen Vegetables	HIGH	LOW	0.1

5. Sensor Reheat (NN-S560BFAPH/CPH,NN-S560WF APH/CPH)

Auto Sensor Reheat is a quick and easy way to reheat refrigerator and room temperature foods.

Simply press the reheat pad. There is no need to select power level and cooking time.

NOTE: The Auto Sensor Reheat process is same as Auto Sensor Cooking process.

Sensor Reheat (All Sensor Modeis)

Category	P1 Power	P2 Power	K Factor Standard
Sensor Recheat	HIGH	LOW	0.1

CAUTIONS TO BE OBSERVED WHEN TROUBLESHOOTING

Unlike many other appliances, the microwave oven is high-voltage, high current equipment. Though it is free from danger in ordinary use, extreme care should be taken during repair.

CAUTION
Servicemen should remove their watches whenever working close to or replacing the magnetron.

1. Check the grounding

Do not operate on a 2-wire extension cord. The microwave oven is designed to be used when grounded. It is inoperative, therefore, to make sure it is grounded properly before beginning repair work.

2. Inverter Warnings **NEW H.V.**

DANGER OF HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LIVE) OF THE INVERTER POWER SUPPLY (U)

This High Voltage Inverter Power Supply circuit supplies very high voltage and very high current for the magnetron tube. Though it is free from danger in ordinary use, extreme care should be taken during repair. As you can see, it looks like a TV flyback transformer, however the current is extremely large and so danger exists because of its high current and high voltages.

The aluminum heat sink is also energized with high voltage (HOT), so do not touch when AC input terminal is connected to the power line because one of the IGBT switching power devices (Collector) is directly connected to the Aluminum heat sink.

The Aluminum heat sink may be HOT from heat energy; therefore, extreme care should be taken during servicing and replacing.

WARNING OF INVERTER POWER SUPPLY (U) GROUNDING

Check the High Voltage Inverter Power Supply circuit grounding. This High Voltage Inverter Power Supply circuit board must have a proper chassis ground by the grounding bracket to the chassis ground; otherwise, this H.V. Inverter circuit board will expose very high voltage and cause extreme DANGER! Be sure to have proper grounding by the grounding plate and screws.

WARNING OF DISCHARGING HIGH VOLTAGE CAPACITORS

Warning about the electric charge in the high voltage capacitors. For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitors in the inverter power supply circuit board.

When replacing or checking parts, remove the power plug from the outlet and short the Inverter output terminal of the magnetron filament terminals to the chassis ground with an insulated handle screwdriver to discharge. Please make sure to touch chassis ground side first then short to the output terminals.

WARNING

There is high-voltage present, with high-current capabilities in the circuits of the primary, and secondary windings, choke coil and heat sink of the Inverter. It is extremely dangerous to work on or near these circuits with oven energized.

DO NOT measure the voltage in the high voltage circuit including filament voltage of magnetron.

WARNING

Never touch any circuit wiring with your hand nor with an insulated tool during operation.

3. When parts must be replaced, remove the power plug from the outlet.

4.When the 18 Amp fuse is blown due to the operation of short switch:

WARNING

When the 18 Amp. fuse if blown due to the operation of short switch, you must replace Primary latch switch and short switch. Also replace power relay B (RY1) when the continuity check reads shorted contacts (1-2).

(A) This is mandatory. Refer to “Measurements and Adjustments” for these switches.

(B) When replacing the fuse, confirm that it has the appropriate rating for these models.

(C) When replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their ability to hold the switches.

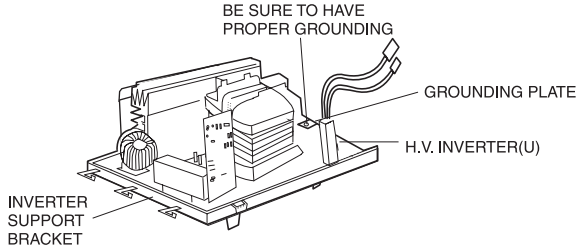
5.Avoid inserting nails, wire, etc. through any holes in the unit during operation.

Never insert a wire, nail or any other metal object through the lamp holes on the cavity or any other holes or gaps, because such objects may work as an antenna and cause microwave leakage.

MAGNETRON FILAMENT TERMINAL

INSULATED HANDLE SCREWDRIVER

Touch chassis side first then short to the terminal of the magnetron filament terminal.



6.Confirm after repair

(A) After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose nor missing.
Microwaves might leak if screws are not properly tightened.

(B) Make sure that all electrical connections are tight before inserting the plug into the wall outlet.

(C) Check for microwave energy leakage. (Refer to procedure for measuring microwave energy leakage.)

CAUTION

MICROWAVE RADIATION

DO NOT BECOME EXPOSED TO RADIATION FROM THE MICROWAVE GENERATOR OR OTHER PARTS CONDUCTING MICROWAVE ENERGY.

IMPORTANT NOTICE **NEW H.V.**

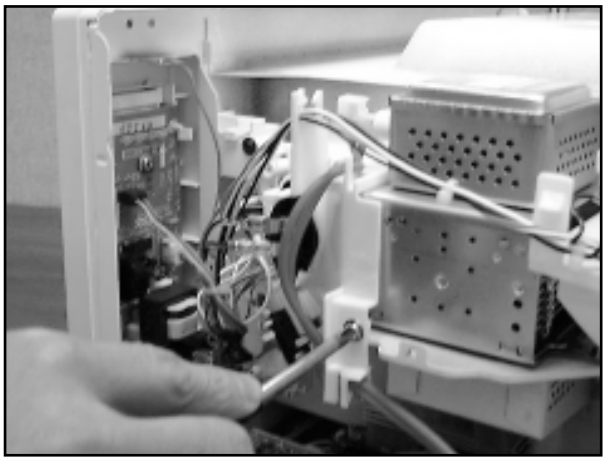
1. The following components have potentials above 250V while the appliance is operating..
   * Magnetron
   * High voltage transformer (Located on Inverter (U))
   * High voltage diodes (Located on Inverter (U))
   * High voltage capacitors (Located on Inverter (U))

   Pay special attention on these portions.
2. When the appliance is operated with the door hinges or magnetron fixed incorrectly, the microwave leakage can reach more than 5mW/cm^2. After repair or exchange, it is very important to check if magnetron and the door hinges are correctly fixed.

DISASSEMBLY AND PARTS REPLACEMENT PROCEDURE

1. Magnetron

(A) Discharge the high voltage capacitors, as mentioned and shown on page 11.
(B) Remove 1 screw holding air guide c to magnetron.
(C) Disconnect 2 high voltage lead wires from magnetron filament terminals.
(D) Remove 4 screws holding the magnetron.
NOTE: After replacement of the magnetron, tighten mounting screws in an X pattern, properly making sure there is no gap between the waveguide and the magnetron to prevent microwave leakage.

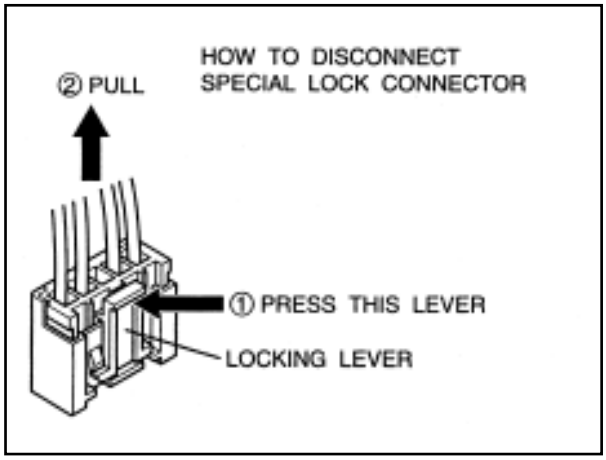


CAUTION

When replacing the magnetron, be sure the antenna gasket is in place.

2. Digital Programmer Circuit (DPC) and membrane key board.

NOTE: Be sure to ground any static electric charge built up on your body before handling the DPC.
(A) Disconnect all connectors from D.P.C.
(B) Slide the escutcheon base upward slightly.
(C) Remove 1 screws holding DPC

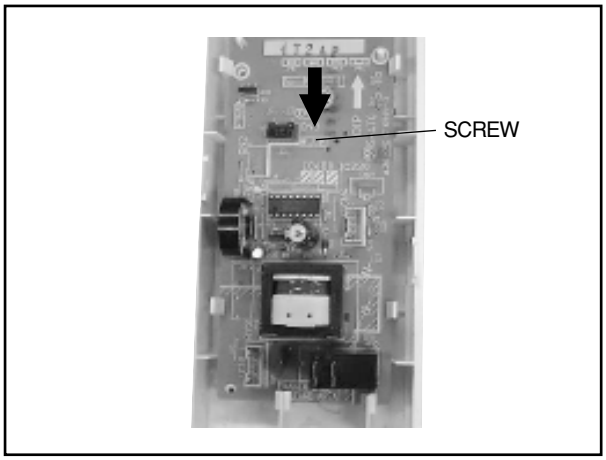


To replace membrane key board

(F) Push the upper part of key board (display window portion) from back of escutcheon base and peel off escutcheon sheet and membrane key board completely from escutcheon base.
NOTE: 1. The membrane key board is attached to the escutcheon base with double faced adhesive tape. Therefore, applying hot air such as using a hair dryer is recommended for smoother removal.
2. When installing new membrane key board, make sure that the surface of escutcheon base is cleaned sufficiently so that any problems (shorted contacts or uneven surface) can be avoided.
3. Alignment position of membrane key board is as follows;
Membrane key board: Right and upper edges
Escutcheon sheet: Right and upper edges

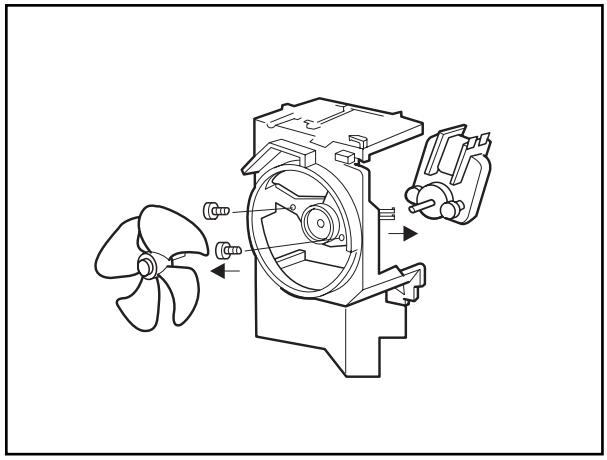
3. Low voltage transformer and/or power relays (RY1, RY2)

NOTE: Be sure to ground any static electric charge built up on your body before handling the DPC.
(A) Using solder wick or a desoldering tool and 30W soldering iron, carefully remove all solder from the terminal pins of the low voltage transformer and/or power relays.
NOTE: Do not use a soldering iron or desoldering tool of more than 30 watts on DPC contacts.
(B) With all the terminal pins cleaned and separated from DPC contacts, remove the defective transformer/power relays and install new transformer/relays making sure all terminal pins are inserted completely. Resolder all terminal contacts carefully.



4. Fan motor

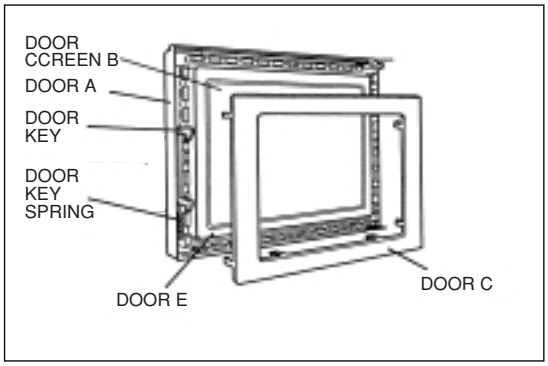
(A) Disconnect 2 lead wires from fan motor terminals.
(B) Remove 1 screw at located on oven attaching orifice assembly.
(C) Remove orifice assembly/Inverter power supply (U) from oven assembly. (Refer page 15)
(D) Remove fan blade from the fan motor shaft by pulling it straight out.
(E) Remove 2 screws holding fan motor to orifice.
(F) Separate the fan motor from the orifice assembly by freeing 2 catch hooks on the orifice assembly.



5. Door assembly

(A) Remove door C from door E by carefully pulling outward starting from upper right hand corner using a flat blade screwdriver.
(B) Separate door E from tabs on door A and remove door A.
(C) Open Door E at the opening angle of approximately 10° (Note: The door cannot be removed if the opening angle is greater than 10°).
(D) Remove the door from its hinges by pushing the door's lower hinge pin upward and out.
(E) Remove door screen B from door A.
(F) Remove door key and door key spring.
(G) When reassembling door hold door E at the opening angle of approximately 10°.
(H) Place the door's lower hinge pin into the bottom hinge hole.
(I) Use your left index finger to support the door's lower hinge pin while guiding the door's upper hinge pin into the top hinge hole.
(J) Lower your finger to seat the door onto the hinges.
(K) Replace other components.
(L) **Door alignment is crucial. If door is misaligned, apply pressure until alignment is achieved.**

After replacement of the defective component parts of the door, reassemble, install, and perform microwave leakage test.



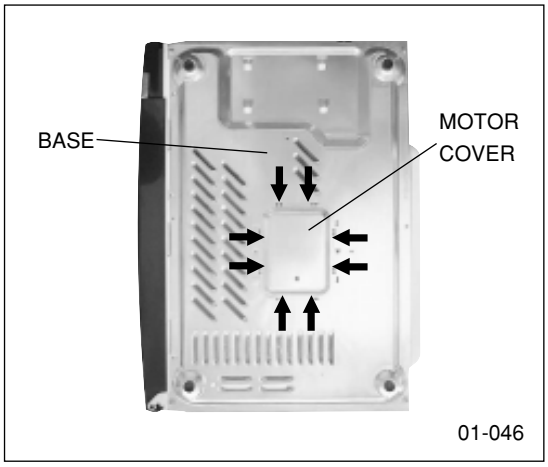
6. Turntable motor

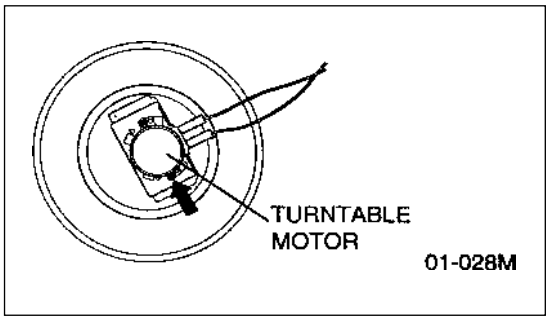
(A) Remove the motor cover by breaking off at the 8 spots indicated by arrows with a cutter or the like. (See Figure)

NOTE: After breaking off the motor cover, make sure that cut-off portions are properly trimmed off or bend to inside so that no sharp edge will expose to outside.

(B) Disconnect 2 lead wires connected to the turntable motor.
(C) Remove the turntable motor by removing 1 screw.

NOTE: After reinstalling the new turntable motor and reconnecting the two lead wires, reinstall the motor cover by rotating it around 180 , tucking the tabs under the base into the 2 provided slots, then screw the single tab to the base using a 4mm X 6mm screw (not provided).

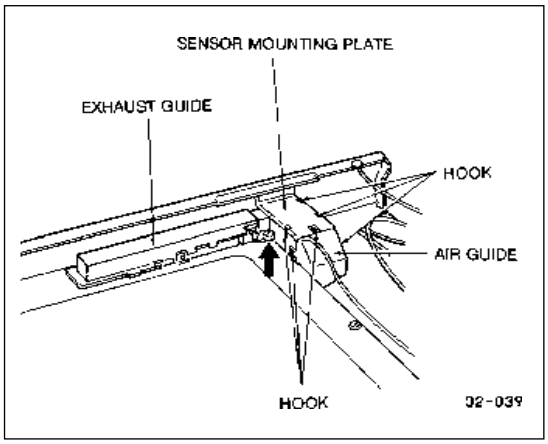


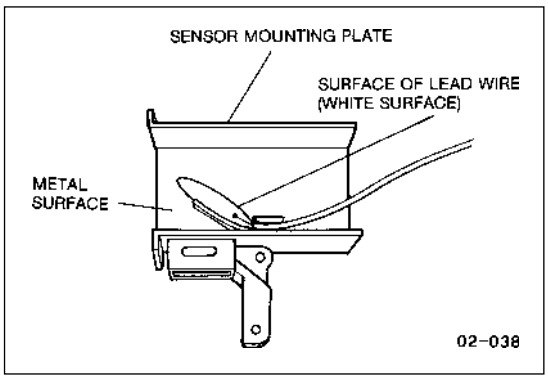


7. Steam Sensor

(A) Remove 1 screw holding steam sensor unit. (indicated by arrows)
(B) Disconnect CN2 connector from digital programmer circuit board.
(C) Remove exhaust guide from steam sensor unit.
(D) Remove catch hooks on sensor mounting plate and air guide.
(E) Remove steam sensor from sensor mounting plate.

NOTE: When installing the steam sensor, make sure that the direction of steam sensor is as shown in figure.





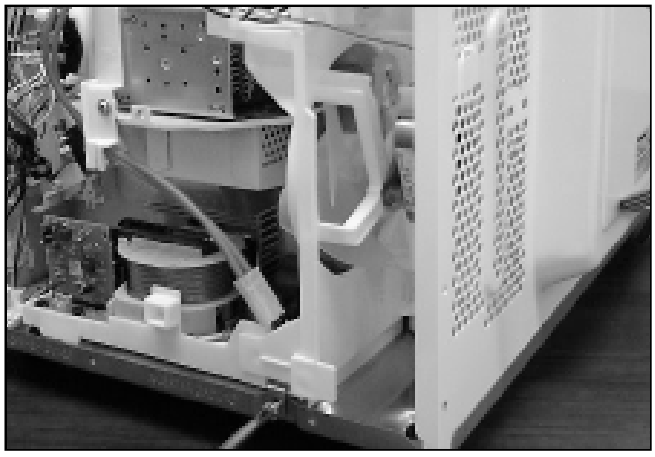
8. Inverter Power Supply (U)

CAUTIONS WHILE REPLACING INVERTER POWER SUPPLY (U)

1. Make sure to leave the grounding plate in its place.
2. Make sure to securely tighten grounding screw from the bottom of chasis (base).
3. Securely connect 3 lead wire connectors.
4. Make sure the heat sink has enough space (gap) from the oven. Take special care not to touch any lead wire to the aluminum heat sink because it is hot.

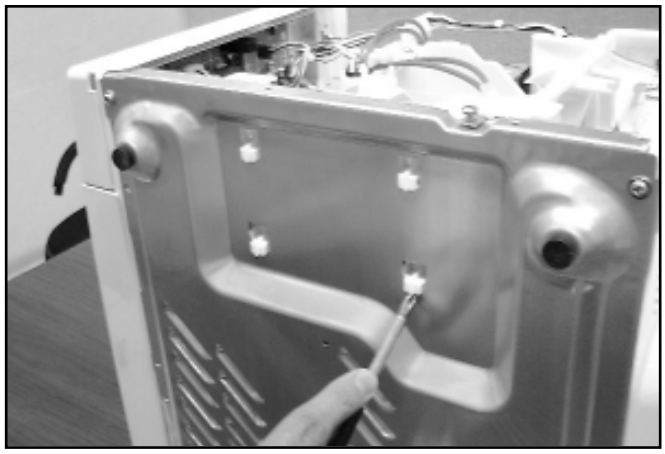
1. Take off outer panel.

2. Remove screw

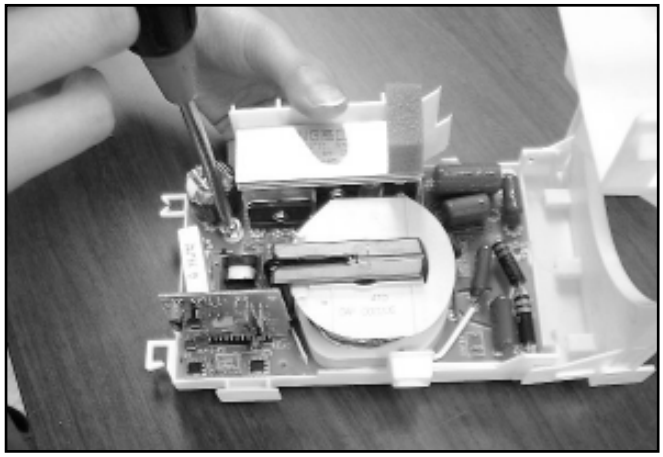


3. Remove screw
4. Disconnect all wires from inverter. Detach turntable wires from inverter bracket.

5. Remove screw and slide oriffice toward you, then lift up and out.



6. Slide four locking of oriffice at the bottom of the base slightly



7. Remove 2 screws holding inverter to inverter bracket.

8. Replace inverter and reassemble to inverter bracket A.
9. Retighten 2 screw
10. Slide and place assembly to the correct location of a completed unit.
11. Push Inverter Assembly until locking tabs are locked.
12. Retighten inverter screws and orifice screws.
13. Reconnet all wires to correct location and redress turntable wires.

COMPONENT TEST PROCEDURE

CAUTION NEW. H.V.

1. High voltage is present at the high voltage terminal of the High Voltage Inverter (U) including aluminum heat sink during any cook cycle.
2. It is neither necessary nor advisable to attempt measurement of the high voltage.
3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitors.

1. Primary Latch Switch, Secondary (Secondary Latch Switch and Power Relay B) Interlocks.

(A) Unplug the lead connectors to Power Relay B and verify continuity of the power relay B 1-2 terminals.
(B) Unplug lead connectors to Primary Latch Switch and Secondary Latch Switch.
(C) Test the continuity of switches at door opened and closed positions with ohm meter (low scale).
Normal continuity readings should be as follows.

	Door Closed	Door Opened
Primary Latch Switch	0 Ω (close)	∞ Ω (open)
Secondary Latch Switch	0 Ω (close)	∞ Ω (open)
Power Relay B	∞ Ω (open)	∞ Ω (open)

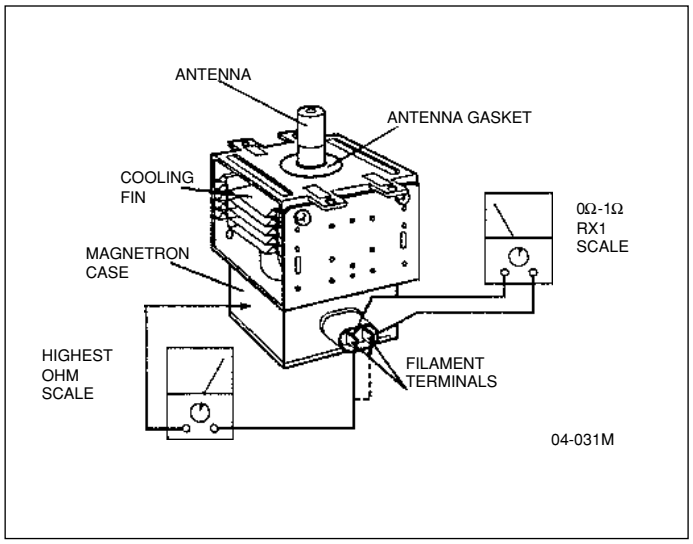
2. Short Switch & Monitor

(A) Unplug lead wires from Inverter Power Supply (U) primary terminals.
(B) Connect test probes of ohm meter to the disconnected leads which were connected to Inverter Power Supply (U).
(C) Test the continuity of short switch with door opened and closed positions using lowest scale of the ohm meter.
Normal continuity readings should be as follows.

Door Opened	Door Closed
0 Ω	∞ Ω

3. Magnetron

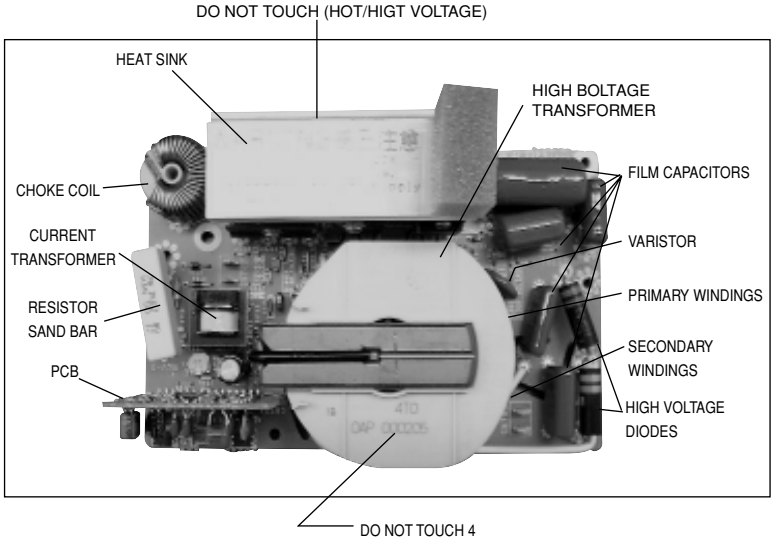
Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose for an open filament or shorted magnetron.
(A) Isolate magnetron from the circuit by disconnecting the leads.
(B) A continuity check across magnetron filament terminals should indicate one ohm or less.
(C) A continuity check between each filament terminal and magnetron case should read open.



4. Membrane key board (Membrane switch assembly)

Check continuity between switch terminals, by tapping an appropriate pad on the key board. The contacts assignment of the respective pads on the key board is as shown in digital programmer circuit.

5. Inverter Power Supply (U)for USA only
DO NOT try to REPAIR this H.V. Inverter power supply (U).Replace as whole H.V. Inverter(U) Unit.



DANGER HIGH VOLTAGE

Test if failure codes of H97 or H98 appears by doing the following procedure. It is recommended to use an AC line input current Ampere meter for testing.

Test 1

A. Program DPC.
   1. Tap Clock
   2. Tap TIMER
   3. Tap START
   4. Tap POWER LEVEL
B. Place 1 liter of water load into oven cavity.
C. Unplug 2 pin H.V. lead wire connector CN703 from magnetron tube.
D. Program oven at High power for 1 minute and press start.
   1. After approximately 15 seconds, oven displays H98 and stops oven.
   2. During oven operation, input current is approximately 1.0 to 1.7A. If both 1 and 2 are OK, please proceed to test 2.

	INPUT AMPERE	FAILURE CODE
Unplug CN703	1.0 to 1.7A	H98

.

Test 2.

Continued from Test 1
A. Unplug 3 pin connector, CN701
B. Set oven at High power for 1 minute and start.
   1. After approximately 27 seconds, oven displays H97 and stops oven.
   2. During oven operation, input current is approximately 0.4 to 0.8A

	INPUT AMPERE	FAILURE CODE
Unplug CN701	0.4 to 0.8A	H97

If both 1 and 2 are OK, the Inverter Power Supply (U) can be determined OK.

6. Steam Sensor and Digital Programmer Circuit

In order to determine if the steam sensor function of the digital programmer circuit is in working order or not, do the following test.

1) Place a water load (150 cc) in the oven.
2) Tap Sensor Reheat pad.
3) Tap Start Pad.
4) Steam Sensor detects steam about 1.5 to 4 minutes after the Start Pad is tapped.
5) T1 time cooking automatically switches to remaining time cooking (T2).
6) The remaining cooking time (T2) appears in display window. If the following cooking time appears, Steam Sensor function is normal.

T1 TIME	T2 TIME (Remaining cooking time)
1 Min. 30 Sec.~4 Min.	8 Sec.~23 Sec.

MEASUREMENTS AND ADJUSTMENTS

WARNING

* For continued protection against radiation hazard, replace only with identical replacement parts(For touch models Part No. ANE6142-1450,Type No. V-16G-3C26-M for Primary latch switch; Part No. A61425180AP, Type No. L-3C2-2 for Secondary latch switch; Part No. A61785180AP, Type No. L-2C2-2 for short switch and Part. No. AEG5J1EG12B/AEG5J1EG18B, Type No. G5J-1-TP for power relay B(RY1))
* When the 18 Amp. fuse is blown due to the operation of the short switch, you must replace power relay B. Primary latch switch and the short switch. Then follow the installation procedures below.
* Interlock switch replacement－In replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their ability to hold the switches.
* Refer to schematic diagram to ensure proper connection.

1. Adjustment of Primary latch switch, Secondary latch switch and Short switch.

(A) When mounting Primary latch switch,Secondary latch switch and short switch to door hook assembly, mount the Primary latch switch, the Secondary latch switch and the short switch to the door hook assembly as shown in table.

NOTE: No specific adjustment during installation of Primary latch switch, Secondary latch switch and short switch to the door hook is necessary.

(B) When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of arrow in the illustration so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.

(C) Reconnect the short switch and check the continuity of the monitor circuit and all latch switches again by following the components test procedures.

2. Measurement of microwave output

The output power of the magnetron can be determined by performing IEC standard test procedures. However,due to the complexity of IEC test procedures, it is recommended to test the magnetron using the simple method outlined below.

Necessary Equipment:

*1 liter beaker *Glass thermometer

*Wrist watch or stopwatch

NOTE: Check the line voltage under load.Low voltage will lower the magnetron output. Take the temperature readings and heating time as accurately as possible.

(A) Fill the beaker with exactly one liter of tap water.Stir the water using the thermometer and record the beaker's temperature. (recorded as T1).

(B) Place the beaker on the center of glass cook plate. Set the oven for High power and heat it for exactly one minute.

(C) Stir the water again and read the temperature of the beaker. (recorded as T2).

(D) The normal temperature rise at High power position for each model is as shown in table.

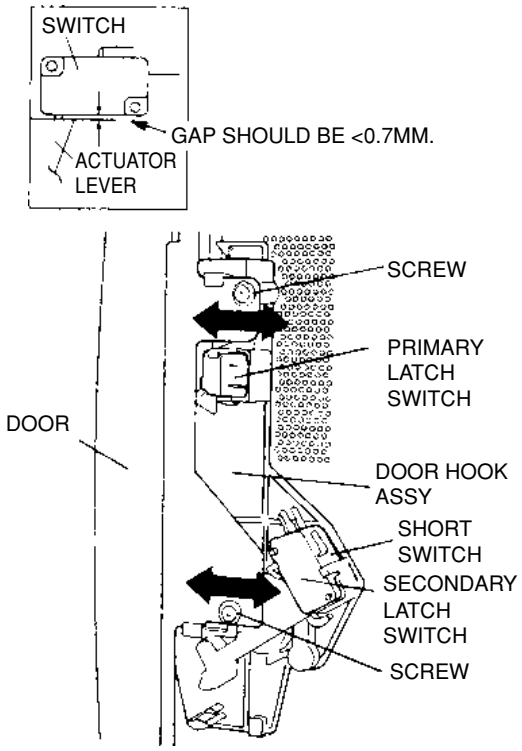


TABLE (1L-1min. test)

RATED OUTPUT	TEMPERATURE RISE
1000~1100W(IEC705-88)	Min. 16.2°F(9°C)
1200~1300W(IEC705-88)	Min. 17.6°F(9.5°C)

PROCEDURE FOR MEASURING MICROWAVE ENERGY LEAKAGE

WARNING

Check for radiation leakage after every servicing. Should the leakage be more than 2 mW/cm² (1mW/cm² for Canada) inform PASC, PSC, or PCI immediately. After repairing or replacing any radiation safety device, keep a written record for future reference, as required by D.H.H.S. and Health and Welfare Canada regulation. This requirement must be strictly observed. In addition, the leakage reading must be recorded on the service repair ticket while in the customer's home.

NOTE: The U.S. Government standard is 5 mW/cm² while in the customer's home. 2mW/cm² stated here is our own voluntary standard. (1mW/cm² for Canada)

1. Equipment

*Electromagnatic radiation monitor
*Glass thermometer 212 °F or 100 °C
*600cc glass beaker

2. Procedure for measuring radiation leakage

Note before measuring.

(1) Do not exceed meter full scale deflection. Leakage monitor should initially be set to the highest scale.

(2) To prevent false readings the test probe should be held by the grip portion of the handle only and moved along the shaded area in Figure no faster than 1 inch/sec (2.5cm/sec).

(3) Leakage with the outer panel removed ..... less than 5mW/cm² .

(4) Leakage for a fully assembled oven with door normally closed ..... less than 2mW/cm² (1mW/cm² for Canada).

(5) Leakage for a fully assembled oven [Before the latch switch (primary) is interrupted] while pulling the door ..... less than 2mW/cm² .

(A) Pour 275 ± 15cc (9ozs ± 1/2oz) of 20° ± 5 °C (68° ± 9 °F) water in a beaker which is graduated to 600cc, and place in the center of the oven.

(B) Set the radiation monitor to 2450MHz and use it following the manufacturer's recommended test procedure to assure correct results.

(C) When measuring the leakage, always use the 2 inch (5cm) spacer supplied with the probe.

(D) Tap the start pad or set the timer and with the magnetron oscillating, measure the leakage by holding the probe perpendicular to the surface being measured.

(1) Measurement with the outer panel removed.

Whenever you replace the magnetron, measure for radiation leakage before the outer panel is installed and after all necessary components are replaced or adjusted. Special care should be taken in measur ing around the magnetron.

WARNING

Avoid contacting any high voltage parts.

(2) Measurements with a fully assembled oven.

After all components, including outer panel are fully assembled, measure for radiation leakage around the door periphery, the door viewing window, the exhaust opening and air inlet openings.

3. Record keeping and notification after measurement

(A) After any adjustment or repair to a microwave oven, a leakage reading must be taken. Record this leakage reading on the repair ticket even if it is zero.

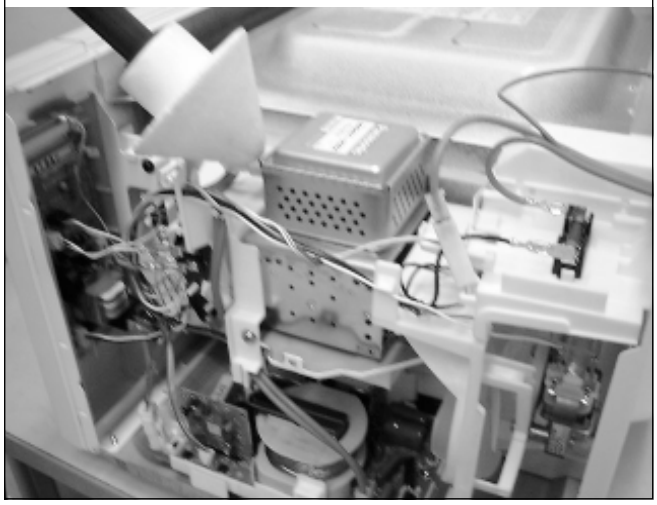
A copy of this repair ticket and the microwave leakage reading should be kept by repair facility.

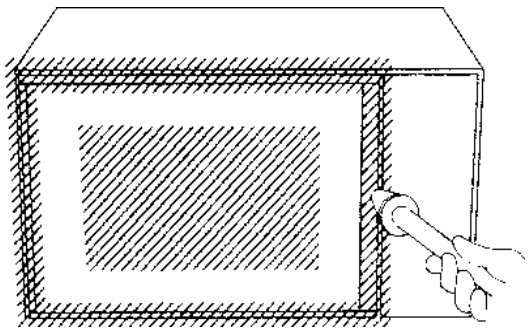
(B) Should the radiation leakage be more than 2 mW/cm² (1mW/cm for Canada) after determining that all parts are in good condition, functioning properly, and genuine replacement parts as listed in this manual have been used, immediately notify PASC, PSC or PCI.

4. At least once a year, have the radiation monitor checked for calibration by its manufacturer.

WARNING

AVOID CONTACTING ANY HIGH VOLTAGE PARTS.





01-035

MOVE PROBE ALONG SHADED AREA(////)AROUND EXHAUST OPENINGS(as shown)AND AROUND AIR INLET OPENING

TROUBLESHOOTING GUIDE

CAUTION

1. Check grounding before checking for trouble.
2. Be careful of high voltage circuit.
3. Discharge high voltage capacitor.
4. When checking the continuity of the switches or the high voltage transformer,disconnect one lead wire from these parts and then check continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter. When disconnecting a plastic connector from a terminal, you must hold the plastic connector instead of the lead wire and then disconnect it, otherwise lead wire may be damaged or the connector cannot be removed.
5. Do not touch any parts of the circuitry on the digital programmer circuit, since static electric discharge may damage this control panel.
   Always touch yourself to ground while working on this panel to discharge any static charge in your body.
6. 120V AC is present on the digital programmer circuit (Terminals of power relay's and primary circuit of low voltage transformer). When troubleshooting, be cautious of possible electrical shock hazard.

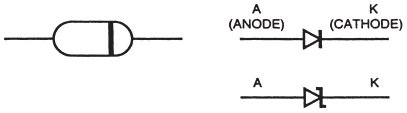
First of all operate the microwave oven following the correct operating procedures in order to find the exact cause of any trouble.

	SYMPTOM	CAUSE	CORRECTIONS
1.	Oven is dead. Fuse is OK. No display and no operation at all.	1. Open or loose lead wire harness 2. Open thermal cutout (Cavity) 3. Open low voltage transformer 4. Defective DPC	Check fan motor when thermal cutout is defective.
2.	No display and no operation at all. Fuse is blown.	1. Shorted lead wire harness 2. Defective primary latch switdh (NOTE 1) 3. Defective short switch (NOTE 1) 4. Defective Inverter Power Supply (U) (Page 18)	Check adjustment of primary, secondary latch switch and short switch including door.
		NOTE 1: All of these switches must be replaced at the same time. Check continuity of power relay (RY1)'s contacts (between 1 and 2) and if it has continuity, replace power relay B (RY-1)'s.	
3.	Oven does not accept key input(Program)	1. Key input is not insequence 2. Open or loose connection of membrane key pad to DPC (Flat cable) 3. Shorted or open membrane key board 4. Defective DPC	Refer to operation procedure. Refer to DPC troubleshooting.
4.	Fan motor turn on when oven is plugged in with door closed.	1. Misadjustment or loose wiring of secondary latch switch 2. Defective secondary latch switch	Adjust door and latch switches.
5.	Timer starts count down but no microwave oscillation. (No heat while oven lamp and fan motor turn on)	1. Off-alignment of latch switches 2. Open or loose connection of high voltage circuit especially magnetron filament circuit NOTE: Large contact resistance will bring lower magnetron filament voltage and causing magnetron to lower output and/or be intermittent. 3. Defective high voltage component HV Inverter Power Supply (u) Magnetron 4. Open or loose wiring of power relay B (RY-1) 5. Defective primary latch switch 6. Defective DPC or power relay B (RY-1)	Adjust door and latch switches. Check high voltage component according to component test procedure and replace if it is defective. Refer to DPC troubleshooting Adjust door and latch switches.
6.	Oven can program but timer does not start countdown.	1. Open or loose wiring of secondary latch switch 2. Off-alignment of secondary latch switch 3. Defective secondary latch switch	
7.	Microwave output is low. Oven takes longer time to cook food.	1. Decrease in power source voltage 2. Open or loose wiring of magnetron filament circuit.(Intermittent oscillation) 3. Aging change of magnetron	Consult electrician
8.	Fan motor turns on and turntable rotates when door is opened.	1. Shorted primary latch switch	

7.	Oven does not operate and return to plugged in mode as soon as start pad is pressed.	1. Defective DPC	Check tighten screws on escutcheon base bracket, D.P.C. board.
8.	Loud buzzing noise can be heard.	1. Loose fan and fan motor	
9.	Turntable motor does not rotate.	1. Open or loose wiring of turntable motor 2. Defective turntable motor	
10.	Oven stops operation during cooking.	1. Open or loose wiring of primary and secondary latch switch 2.Operation of thermal cutout	Adjust door and latch switches.
11.	Oven returns to plugged in mode after 10 seconds elapses on the Auto sensor cooking mode.	1.Open or loose wiring of sensor terminal from DPC 2.Open steam sensor 3.Defective DPC	

HOW TO CHECK THE SEMICONDUCTORS USING AN OHM METER

Diode



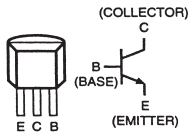
	FORWARD	REVERSE
A-K	SMALL	∞

Transistor

NPN Transistor

2SC·····

2SD·····

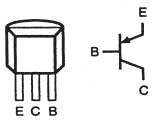


	FORWARD	REVERSE
B-E	SMALL	∞
B-C	SMALL	∞
C-E	∞	∞

PNP Transistor

2SA·····

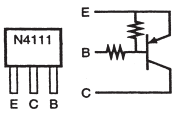
2SB·····



	FORWARD	REVERSE
B-E	SMALL	∞
C-B	SMALL	∞
C-E	∞	∞

Digital Transistor

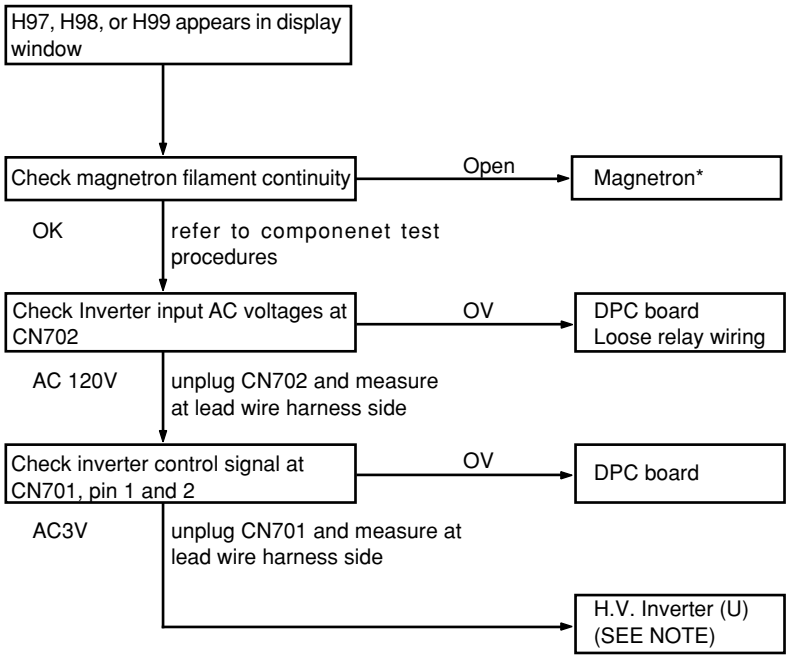
PNP Transistor



	FORWARD	REVERSE
E-B	10kΩ～30kΩ	10kΩ～30kΩ
C-B	50kΩ～90kΩ	∞
C-E	40kΩ～80kΩ	∞

Troubleshooting of Inverter Circuit (U) and Magnetron NEW H.V.

This oven is programmed with a self diagnostics failure code system which will help for troubleshooting. H97, H98, and H99 are the provided failure codes to indicate magnetron and inverter circuit problem areas. This section explains failure codes of H97, H98, and H99. First, you must program the DPC by pressing Clock, Time, Start, Power Level. Program unit for operation. H97, H98, H99 appears in display window a short time after start key is pressed and there is no microwave oscillation.



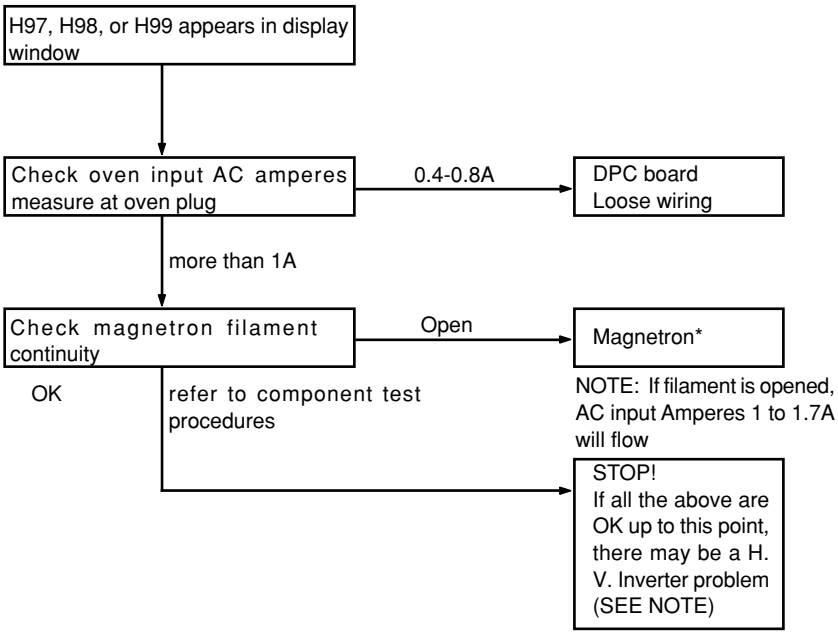
NOTE: After check, unplug unit to reset to normal operation mode.

NOTE: DO NOT try to repair this Inverter Power Supply (U) and also DO NOT RE-ADJUST PRESET VOLUME on the board. It is very dangerous to repair or adjust without sufficient test equipment because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned Inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.

* Check magnetron filament for open or short to casing before proceeding to determine a good magnetron.

Alternate way to troubleshoot oven with AC Ampere meter used

H97, H98, H99 appears in display window a short time after start key is pressed and no microwave oscillation with AC Ampere meter used for troubleshooting


H97, H98, or H99 appears in display window
Check oven input AC amperes measure at oven plug
0.4-0.8A
DPC board
Loose wiring
more than 1A
Check magnetron filament continuity
Open
Magnetron*
OK
refer to component test procedures
NOTE: If filament is opened, AC input Amperes 1 to 1.7A will flow
STOP!
If all the above are OK up to this point, there may be a H. V. Inverter problem (SEE NOTE)

NOTE: After check, unplug unit to reset to normal operation mode.

NOTE: DO NOT try to repair this Inverter Power Supply (U) and also DO NOT

RE-ADJUST PRESET VOLUME on the board. It is very dangerous to repair or adjust without sufficient test equipment because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned Inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.

* Check magnetron filament for open or short to casing before proceeding to determine a good magnetron.

Trouble Related to Digital Programmer Circuit

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No display when oven is first plugged in. Oven is dead.	1	Fuse pattern of DPC	Normal Open (NOTE)	STEP 2 Shorted Circuit of ZNR, L.V.T., Oven Lamp etc. Replace DPC
	2	Low voltage transformer (LVT) secondary voltage	Abnormal 0V Normal	LVT → Step 3
	3	IC-1 pin 8 voltage (Emitter of Q10)	Abnormal Normal = 5V	ZD10, Q10 → Step 4
	4	IC-1 pin 10 voltage (15 pin of IC-220)	Abnormal Normal	IC-220 → IC-1, CX320

NOTE

Procedure of fuse pattern repairing is as follows:

1. When the fuse pattern (PF2) opens.

(1) Remove the jumper wire (PF1).

(2) Insert the removed jumper wire (PF1) to "(PF2)" position and solder it. If both "PF1" and "PF2" fuse patterns are open, please replace DPC.

2. When the fuse pattern (PF4) opens.

(1) Remove the jumper wire (PF3).

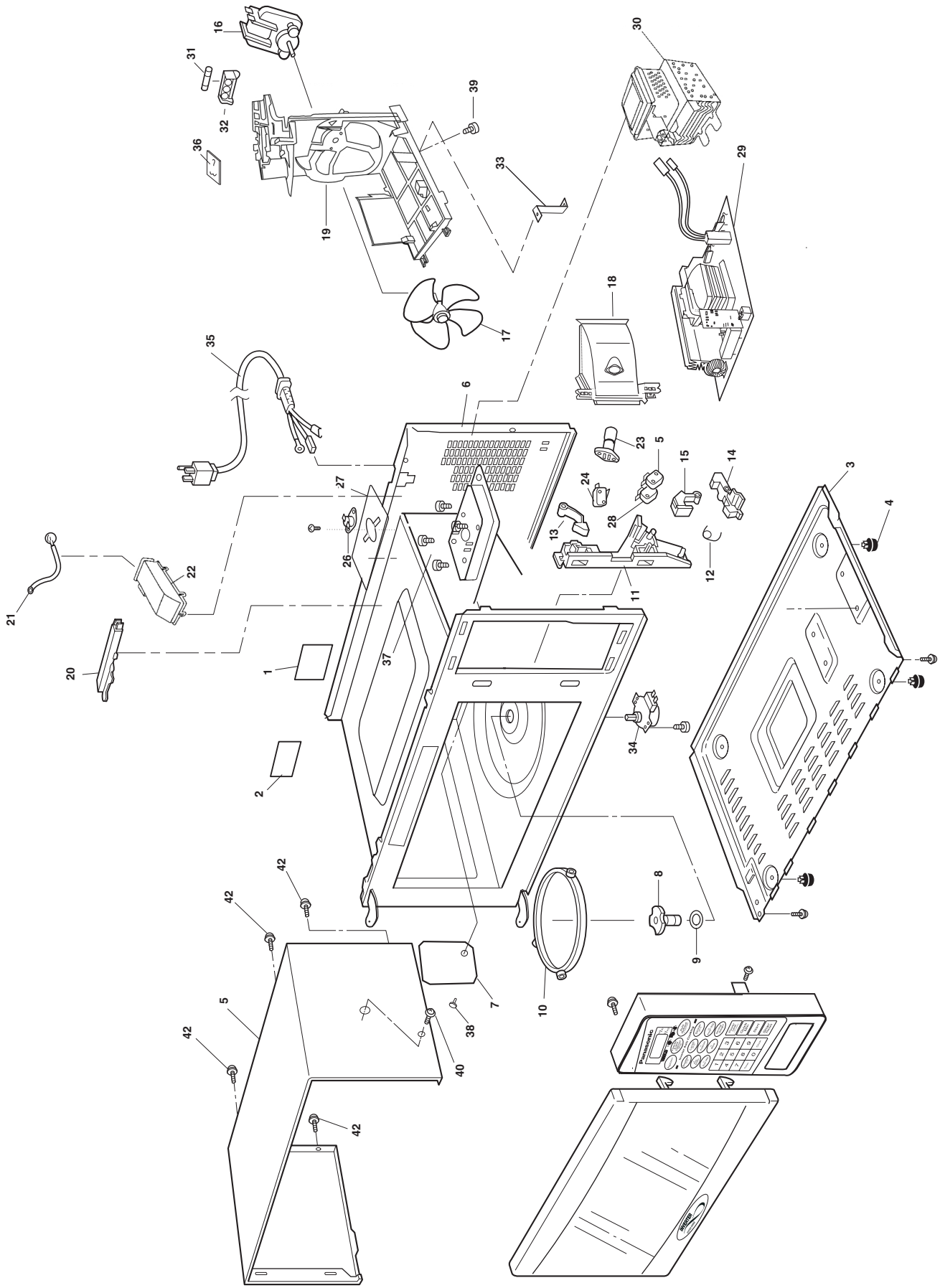
(2) Insert the removed jumper wire (PF3) to "(PF4)" position and solder it. If both "PF3" and "PF4" fuse patterns are open, please replace DPC.

NOTE:* At the time of these repairs, make visual inspection of the varistor for burning damage and examine the transformer with tester for the presence of layer short-circuit (check primary coil resistance).
If any abnormal condition is detected, replace the defective parts.

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No key input	1	Membrane switch continuity	Abnormal	Membrane switch
			Normal	IC-1
No beep sound	1	IC-1 pin 31 voltage	Abnormal	IC-1
			Normal	BZ, IC-220
Power relay A(RY-2) does not turn on even though the program has been set and the start pad is tapped	1	IC-1 pin 32 voltage while operation	Abnormal	IC-1
			Normal = 5V	→ Step 2
	2	Short circuit between pin 6 and pin 16 of IC-220	Still not turn on	RY-2
			RY-2 turns on	IC-220
No microwave oscillation at any power setting	1	IC-1 pin 38 and pin 39 voltages while operation at high power	Abnormal	IC-1
			Normal 5---5V, 15---5V	→ Step 2
	2	Q220 transistor	Abnormal	Q220
			Normal	IC-220, RY-1
Dark or unclear display	1	Replace display and check operation	Normal	DISPLAY
			Abnormal	IC-1
Missing or lighting of unnecessary segment	1	Replace IC-1 and check operation	Normal	IC-1
			Abnormal	DISPLAY
H97/H98 appears in window and oven stops operation. Program High power for 1 minute and conduct following test quickly, unless H97/H98 appears and oven stops. NEW H.V.	1	Unplug CN702(2 pin) connector and measure voltage between terminals	0V	1. Latch Switch 2. DPC/Power Relay
			AC line voltage of 120V	→ Step 2
	2	Unplug CN701(3 pin) connector and measure pin 1 voltage	0V	DPC
			Approx. AC 3V	Magnetron

TO BE CONTINUED FOR SENSOR MODELS				
Auto sensor cooking does not operate normally. (Steam Sensor cooking does not detect steam from foods.)	1	Steam sensor terminal voltage by using high impedance tester (20k Ω/V), when breathe on metal surface of sensor	Abnormal = 0V	Steam sensor
			Normal > 10~30mV	IC-1

EXPLODED VIEW AND PARTS LIST



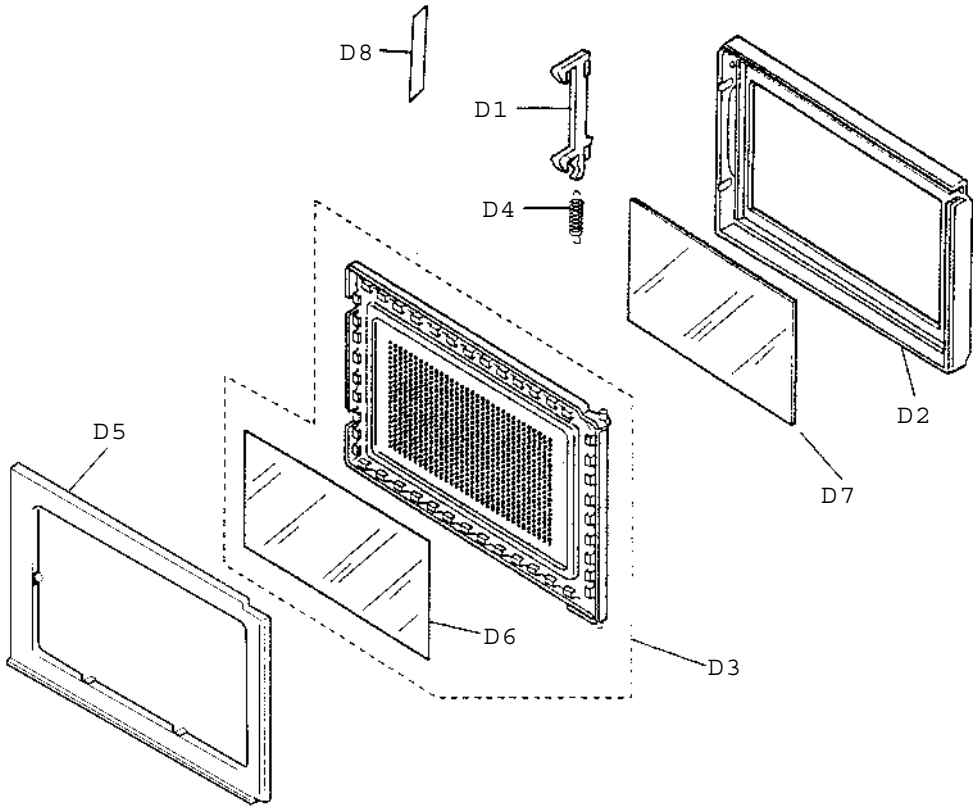
PARTS LIST

NOTE 1: When ordering replacement part(s), please use part number(s) shown in this part list.
Do not use description of the part.
2: Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacture's specified parts.

Ref.No.		Part No.	Part name & Description	Pcs/ set	Remarks
1		F00069660AP	CAUTION LABEL	1	******APH
1		F00067600CP	CAUTION LABEL	1	******CPH
2		F00074T00BAP	NAME PLATE	1	S560BFAPH
2		F00074T00HAP	NAME PLATE	1	S560WFAPH
2		F00074T00BCP	NAME PLATE	1	S560BFCPH
2		F00074T00HCP	NAME PLATE	1	S560WFCPH
2		F00074T10BAP	NAME PLATE	1	S550BFAPH
2		F00074T10HAP	NAME PLATE	1	S550WFAPH
2		F00074T20BAP	NAME PLATE	1	S540BFAPH
2		F00074T20HAP	NAME PLATE	1	S540WFAPH
2		F00074T20BCP	NAME PLATE	1	S540BFCPH
2		F00074T20HCP	NAME PLATE	1	S540WFCPH
2		F00074T30BAP	NAME PLATE	1	L530BFAPH
2		F00074T30HAP	NAME PLATE	1	L530WFAPH
2		F00074T30HCP	NAME PLATE	1	L530WFCPH
2		F00074T40HCP	NAME PLATE	1	L520WFCPH
2		F00074T50HCP	NAME PLATE	1	S510WFCPH
3		F10014T00AP	BASE	1	
4		F10084T00AP	RUBBER FOOT	4	
5		F110D4T00BAP	CABINET BODY (U)	1	****BF*PH
5		F110D4T00HAP	CABINET BODY (U)	1	****WF*PH
6	⚠	F201A4T00AP	OVEN (U)	1	S560*F*PH
6	⚠	F201A4T10AP	OVEN (U)	1	EXCEPT S560*F*PH
7		F20554T00AP	COVER	1	
8		F21314T00AP	PULLY SHAFT	1	
9		ANE2177-F80	WASHER	1	
10		B290D9330AP	ROLLER RING (U)	1	
11	⚠	B3020-1480	DOOR HOOK	1	
12		J3097-1480	LATCH SPRING	1	
13		B3136-1480	HOOK LEVER A	1	
14		B3137-1480	HOOK LEVER B	1	
15		B3138-1480	HOOK LEVER C	1	

Ref.No.		Part No.	Part name & Description	Pcs/ set	Remarks
16		F400A4T00AP	FAN MOTOR	1	AC120V, SINGLE PHASE, 60Hz
17		F40084T00AP	FAN BLADE	1	
18		F40254T00AP	AIR GUIDE A	1	
19		F41444T00AP	ORIFICE	1	
20		F64505540AP	EXHAUST GUIDE B	1	S560*F*PH
21		A707S4T00AP	STEAM SENSOR	1	S560*F*PH
22		F65434T00AP	SENSOR BRACKET C	1	S560*F*PH
23		F612E9660AP	INCANDESCENT LAMP(U)	1	125V, 60Hz, 20W
24	⚠	ANE6142-1450	MICROSWITCH B	1	(V-16G-3C25L)
25	⚠	J61414T00AP	MICROSWITCH A	1	(D3V-16G-3C25)
26	⚠	F61454050AP	THERMAL CUTOUT	1	120°C, ******CPH
27		F66264T00CP	THERMAL CUTOUT MOUNT	1	******CPH
28	⚠	A61785180AP	MICROSWITCH C	1	(SHORT SWITCH) (D3V-1G-2C25)
29	⚠	A606Y4T00AP	H.V.INVERTER (U)	1	
30	⚠	2M261-M32F	MAGNETRON	1	S560*FAPH, S550*FAPH
30	⚠	2M261-M32G	MAGNETRON	1	S560*FCPH
30	⚠	2M258-M32F	MAGNETRON	1	S540*FAPH, L530*FAPH
30	⚠	2M258-M32G	MAGNETRON	1	S540*FCPG, L530WFCPH,L520WFCPH,S510WFCPH
31	⚠	B62308250AP	FUSE	1	18A/120V,60Hz
32		B62314000AP	FUSE HOLDER	1	******APH
33		F61844T00AP	GROUNDING PLATE	1	
34		B63264080AP	TURNTABLE MOTOR	1	
35	⚠	F900C9660AP	AC CORD W/PLUG	1	******APH
35	⚠	F900C9660CP	AC CORD W/PLUG	1	******CPH
36		A692Y4T00CP	NOISE FILTER (U)	1	******CPH
37		XTWANE+10RU	SCREW	4	FOR MAGNETRON
38		XST4+5VS	SCREW	1	FOR COVER
39		XYD4+EE12F	SCREW	1	FOR H.V.INVERTER EARTH
40		XTCA4+12AFK	SCREW	1	FOR CABINET BODY SIDE

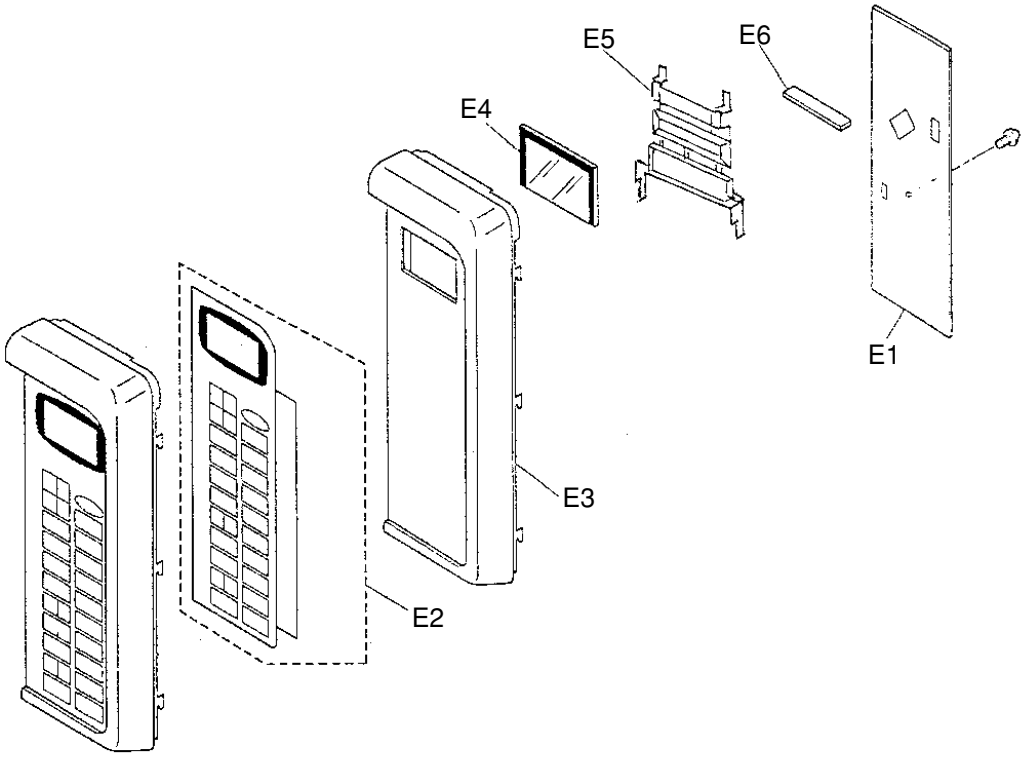
DOOR ASSEMBLY



(S-4T0)

Ref.No.		Part No.	Part name & Description	Pcs/ set	Remarks
D1		B3018-1480	DOOR KEY #A	1	
D2	⚠	F30014T00BAP	DOOR A	1	****BF*PH
D2	⚠	F30014T00HAP	DOOR A	1	****WF*PH
D3	⚠	F302K4T00AP	DOOR E (U)	1	
D4		B30214000AP	DOOR KEY SPRING	1	
D5	⚠	F30854T00AP	DOOR C	1	
D6	⚠	F31454T00AP	DOOR SCREEN A	1	
D7		F31464T00BAP	DOOR SCBEEN B	1	****BF*PH
D7		F31464T00HAP	DOOR SCREEN B	1	****WF*PH
D8		B02454180AP	DHHS LABEL	1	*****FAPH
D8		B04114180CP	CSA LABEL	1	*****FCPH

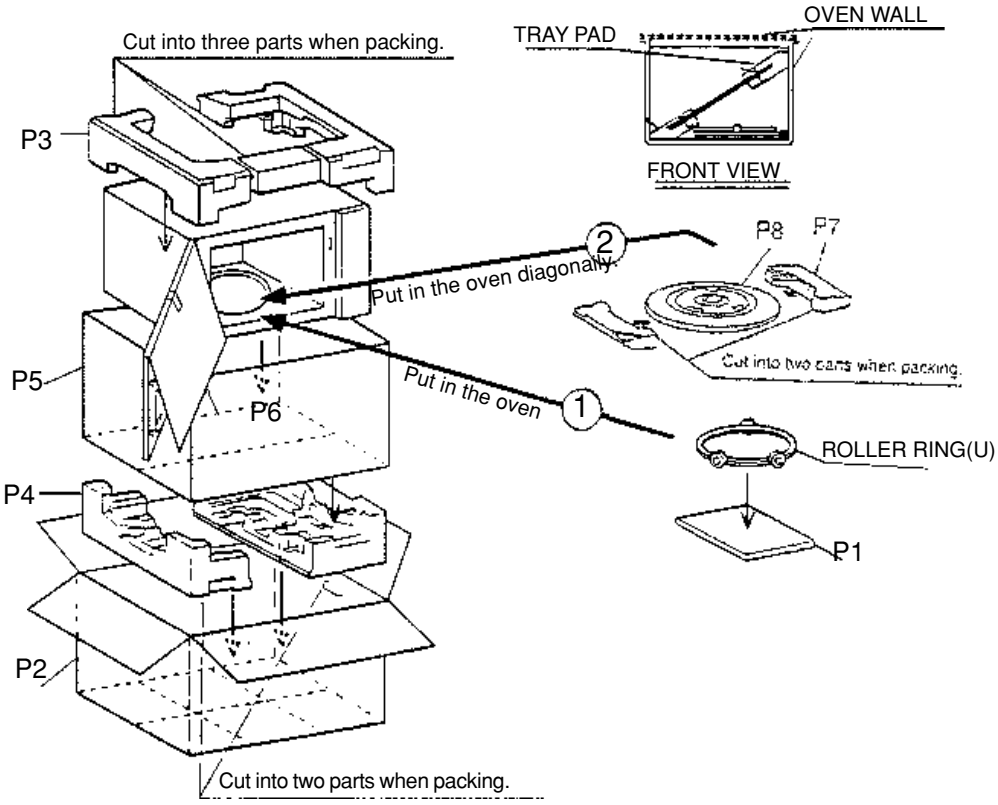
ESCUTHEON BASE ASSEMBLY



(S-4T0)

Ref.No.		Part No.	Part name & Description	Pcs/ set	Remarks	
E1		F603L4T00AP	D.P.CIRCUIT	1	S560BFAPH/S560WFAPH	RTL (W/COMPONENT)
E1		F603L4T00CP	D.P.CIRCUIT	1	S560BFCPH/S560WFCPH	RTL (W/COMPONENT)
E1		F603L4T10AP	D.P.CIRCUIT	1	S550BFAPH/S550WFAPH	RTL (W/COMPONENT)
E1		F603L4T20AP	D.P.CIRCUIT	1	S540BFAPH/S540WFAPH	RTL (W/COMPONENT)
E1		F603L4T20CP	D.P.CIRCUIT	1	S540BFCPH/S540WFCPH	RTL (W/COMPONENT)
E1		F603L4T30AP	D.P.CIRCUIT	1	L530BF/WFAPH	RTL (W/COMPONENT)
E1		F603L4T30CP	D.P.CIRCUIT	1	L530WF/L520WFCPH	RTL (W/COMPONENT)
E1		F603L4T50CP	D.P.CIRCUIT	1	S510WFCPH	RTL (W/COMPONENT)
E2		F603Y4T00BAP	MEMBRANE SWITCH (U)	1	S560BFAPH	
E2		F630Y4T00HAP	MEMBRANE SWITCH (U)	1	S560WFAPH	
E2		F630Y4T00BCP	MEMBRANE SWITCH (U)	1	S560BFCPH	
E2		F630Y4T00HCP	MEMBRANE SWITCH (U)	1	S560WFCPH	
E2		F630Y4T10BAP	MEMBRANE SWITCH (U)	1	S550BFAPH	
E2		F630Y4T10HAP	MEMBRANE SWITCH (U)	1	S550WFAPH	
E2		F630Y4T20BAP	MEMBRANE SWITCH (U)	1	S540BFAPH/S540BFCPH	
E2		F630Y4T20HAP	MEMBRANE SWITCH (U)	1	S540WFAPH/S540WFCPH	
E2		F630Y4T30BAP	MEMBRANE SWITCH (U)	1	L530BFAPH	
E2		F630Y4T30HAP	MEMBRANE SWITCH (U)	1	L530WFAPH/L530WFCPH	
E2		F630Y4T40HCP	MEMBRANE SWITCH (U)	1	L520WFCPH	
E2		F630Y4T50HCP	MEMBRANE SWITCH (U)	1	S510WFCPH	
E3		F80344T00BAP	ESCUTCHEON BASE	1	S560BFAPH/S550BFAPH/S540BFAPH/L530BFAPH	
E3		F80344T00HAP	ESCUTCHEON BASE	1	S560WFAPH/S550WFAPH/S540WFAPH/L530WFAPH	
E3		F80344T50BCP	ESCUTCHEON BASE	1	S560WFCPH/S540BFCPH	
E3		F80344T50HCP	ESCUTCHEON BASE	1	S560WFCPH/S540WFCPH/L530WFCPH/L520WFCPH/S510WFCPH	
E4		AEDDRCD4T0AP	DISPLAY	1		
E5		F66174T00AP	DISPLAY TUBE COVER	1		
E6		A67004T00AP	RUBBER CONNECTOR	1		

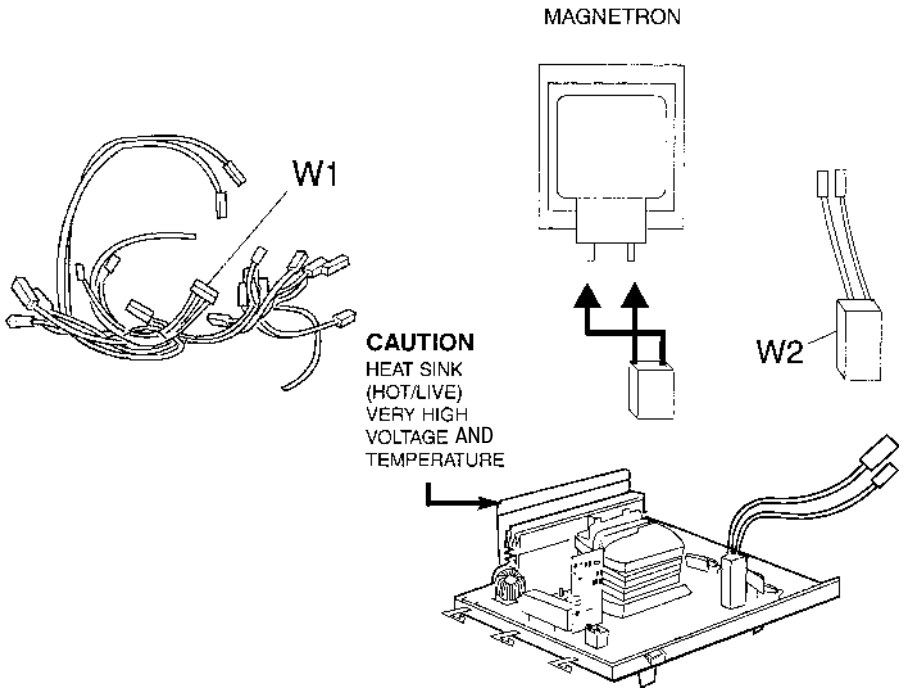
PACKING AND ACCESORIES



(S-4T0)

Ref.No.		Part No.	Part name & Description	Pcs/ set	Remarks
P1		F00034T00AP	INSTRUCTION MANUAL	1	S560BFAPH/S560WFAPH
P1		F00034T00CP	INSTRUCTION MANUAL	1	S560BFCPH/S560WFCPH
P1		F00034T10AP	INSTRUCTION MANUAL	1	S550BFAPH/S550WFAPH
P1		F00034T20AP	INSTRUCTION MANUAL	1	S540BF/WFAPH,L530BF/WFAPH
P1		F00034T20CP	INSTRUCTION MANUAL	1	S540BFCPH/S540WFCPH
P1		F00034T30CP	INSTRUCTION MANUAL	1	L530WFCPH
P1		F00034T40CP	INSTRUCTION MANUAL	1	L520WFCPH
P1		F00034T50CP	INSTRUCTION MANUAL	1	S510WFCPH
P2		F01024T00BAP	PACKING CASE,PAPER	1	S560BFAPH
P2		F01024T00HAP	PACKING CASE,PAPER	1	S560WFAPH
P2		F01024T00BCP	PACKING CASE,PAPER	1	S560BFCPH
P2		F01024T00HCP	PACKING CASE,PAPER	1	S560WFCPH
P2		F01024T10BAP	PACKING CASE,PAPER	1	S550BFAPH
P2		F01024T10HAP	PACKING CASE,PAPER	1	S550WFAPH
P2		F01024T20BAP	PACKING CASE,PAPER	1	S540BFAPH
P2		F01024T20HAP	PACKING CASE,PAPER	1	S540WFAPH
P2		F01024T20BCP	PACKING CASE,PAPER	1	S540BFCPH
P2		F01024T20HCP	PACKING CASE,PAPER	1	S540WFCPH
P2		F01024T30BAP	PACKING CASE,PAPER	1	L530BFAPH
P2		F01024T30HAP	PACKING CASE,PAPER	1	L530WFAPH
P2		F01024T30HCP	PACKING CASE,PAPER	1	L530WFCPH
P2		F01024T40HCP	PACKING CASE,PAPER	1	L520WFCPH
P2		F01024T50HCP	PACKING CASE,PAPER	1	S510WFCPH
P3		F01044T00AP	UPPER FILLER	1	
P4		F01054T00AP	LOWER FILLER	1	
P5		B01068290AP	P.E.BAG	1	
P6		B01075640AP	DOOR SHEET	1	
P7		F01134T00AP	TRAY STYROL	1	
P8		A06014T00AP	COOKING TRAY	1	

WIRING MATERIAL



(S-4T0)

Ref.No.		Part No.	Part name & Description	Pcs/ set	Remarks
W1		F030A4T20AP	LEAD WIRE HARNESS	1	******APH
W1		F030A4T00CP	LEAD WIRE HARNESS	1	******CPH
W2		F030E4T00AP	H.V. LEAD WIRE	1	******APH
W2		F030E4T00CP	H.V. LEAD WIRE	1	******CPH

DIGITAL PROGRAMMER CIRCUIT

(NN-S560BFAPH/CPH,S560WFAPH/CPH)

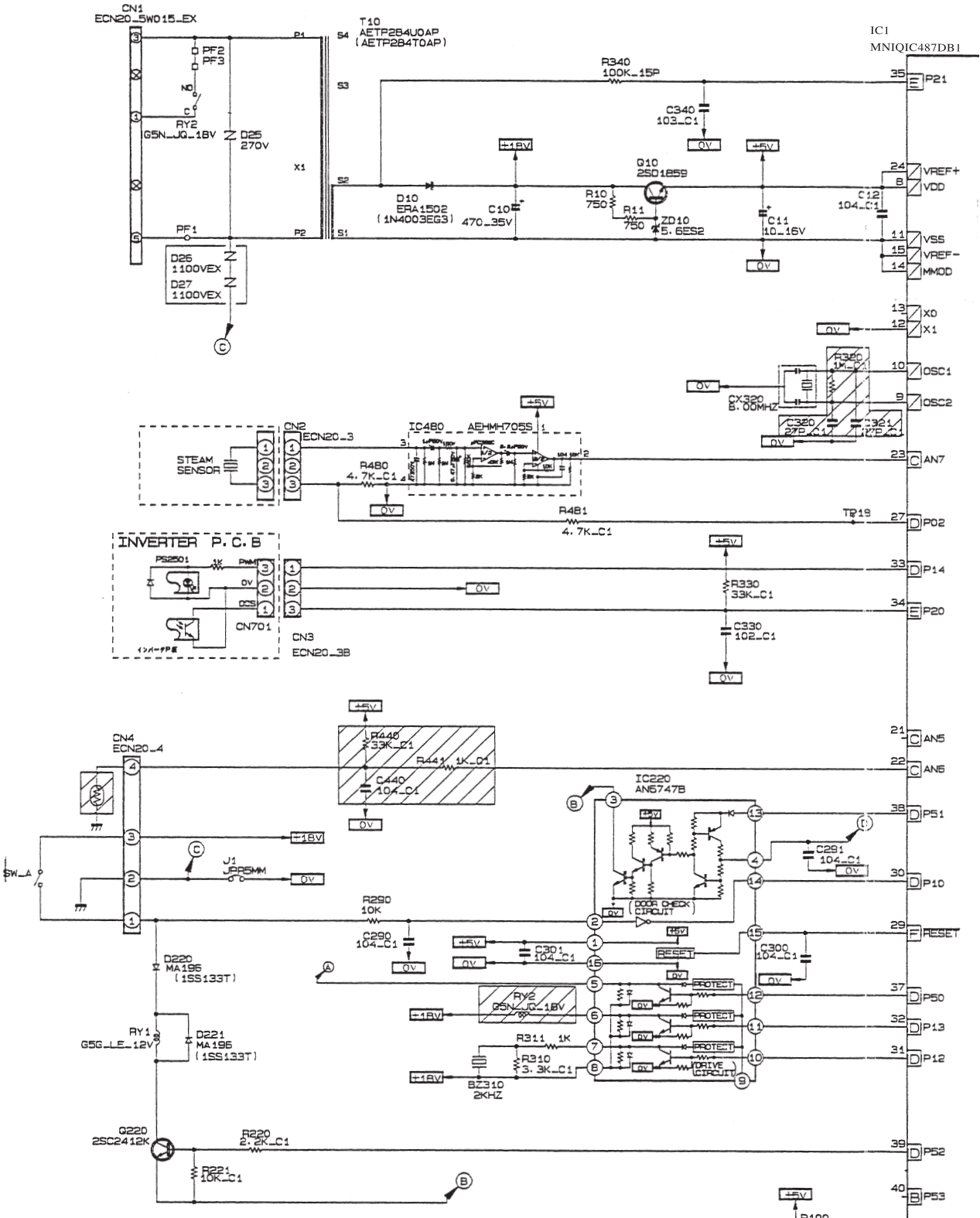
PARTS LIST

Ref.No.		Part No.	Part name & Description	Pcs/ Set	Remarks
BZ310		AEFB22EP20TL	BUZZER	1	2.0KHz
C12,C290,C291,C300,C301		AECUB2F104ZK	CAPACITOR	5	0.1μF/25V
C330		AECUB5C102KK	CAPACITOR	1	0.1μF/50V
C340		AECUB5F103ZK	CAPACITOR	1	0.01μF/50V
C10		ECEA1VM471B	ELECTROLYTIC CAPACITOR A	1	470μF/35V
C11		ECEA1CKA100B	ELECTROLYTIC CAPACITOR A	1	10μF/16V
CN1		AEEMXF01505W	CONNECTOR	1	
CN2		AEEMMF00703W	CONNECTOR	1	
CN3		AEEMXF00703B	CONNECTOR	1	
CN4		AEEMXF00F04W	CONNECTOR	1	
CX320		AEFOS800MG06	CERAMIC RESONATOR	1	6.8MHz
D180,D181,D182,D183		AESQSML210MT	LED	4	
D10		AESSIN4003E	DIODE,SI	1	
D40,D41,D220,D221		MA196-(TA5)	DIODE,SI	4	
D25		AERZ271NS10D	VARISTOR	1	
D26,27		AERZB00NS10D	VARISTOR	2	
IC1		MN101C487DB1	L.S.I	1	
IC220		AN6747B	IC	1	
Q181,Q40,Q220		2SC2412KT146	TRANSISTOR	3	
Q10,Q180		2SD1859TV2Q	TRANSISTOR	2	
R100,R101,R102,R221		AERJ3GSYJ103	RESISTOR	4	10K,1/16W,50%
R40,R41,R42,R43,44,R45, R46,R47,R48		AERJ3GSYJ104	RESISTOR	9	100K,1/16W,50%
R49		AERJ3GSYJ154	RESISTOR	1	150K,1/16W,5%
R220		AERJ3GSYJ222	RESISTOR	1	2.2K,1/16W,5%
R310		AERJ3GSYJ332	RESISTOR	1	3.3K,1/16W,5%
R330		AERJ3GSYJ333	RESISTOR	1	3.3K,1/16W,5%
R181		AERJ3GSYJ360	RESISTOR	1	36Ω,1/4W,5%
R480,R481		AERJ3GSYJ472	RESISTOR	2	4.7K,1/4W,5%
R311		RD16ST102J	RESISTOR	1	1K,1/4W,5%
R180,R290		RD16ST103J	RESISTOR	2	10K,1/4W,5%
R340		RD16ST104J	RESISTOR	1	100K,1/4W,5%
R10,R11		RD16ST751J	RESISTOR	2	750Ω,1/4W,5%
RY1		AEGG5G1A12	POWER RELAY	1	
IC480		AEHMH705S	SENSOR IC	1	
T10		AETP284T0AP	LOW VOLTAGE TRANSFORMER	1	
ZD10		AESZMTAJ5R6B	ZENER DIODE	1	

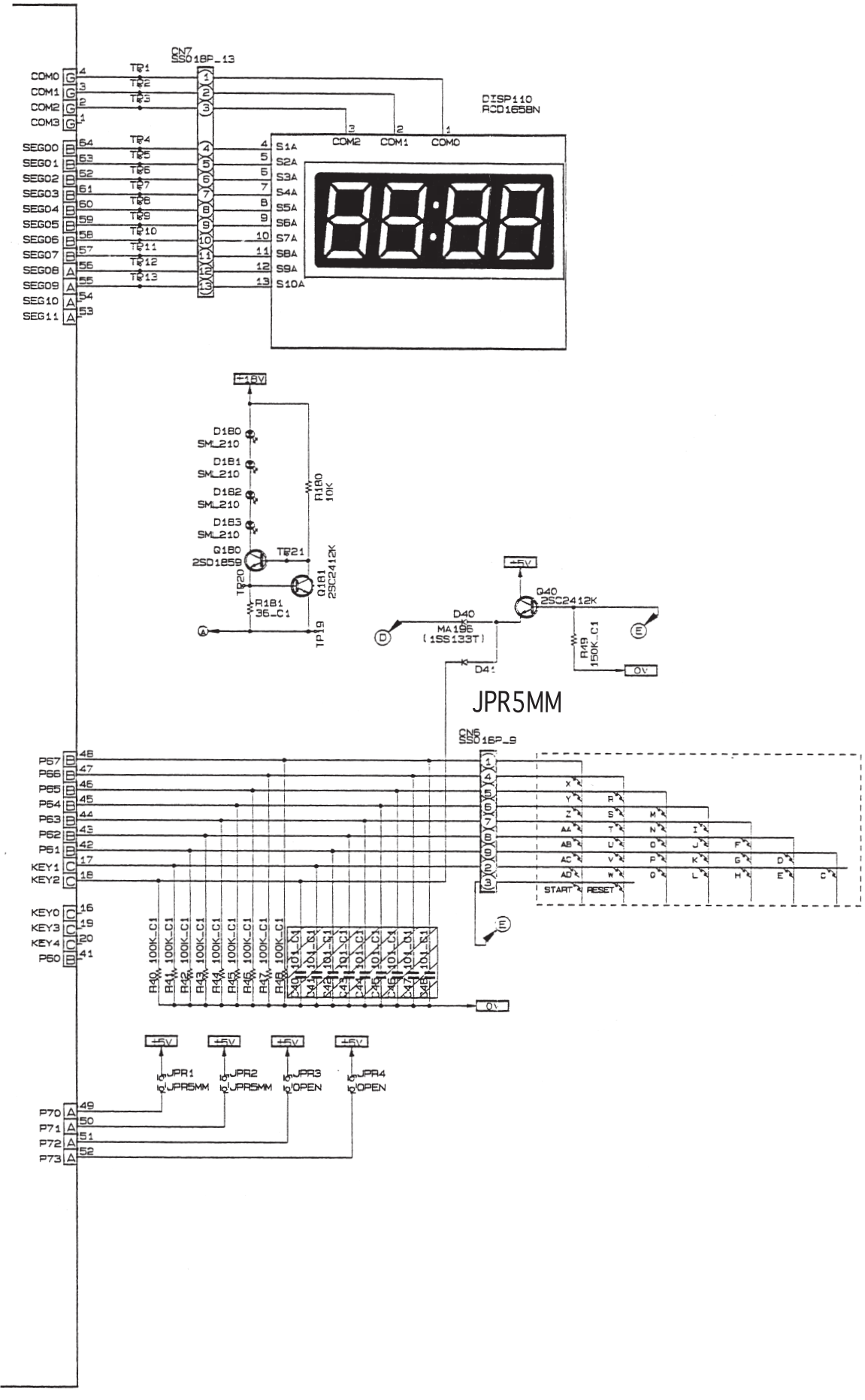
DIGITAL PROGRAMMER CIRCUIT (NN-S530BFAPH/CPH,S540BFAPH/CPH,S540WFAPH/CPH,L530BFAPH/CPH, L530WFAPH/CPH,L520WFAPH/CPH,L510WFAPH/CPH)

PARTS LIST

Ref.No.		Part No.	Part name & Description	Pcs/ Set	Remarks
BZ310		AEFB22EP20TL	BUZZER	1	2.0KHz
C12,C290,C291,C300,C301		AECUB2F104ZK	CAPACITOR	5	0.1MF/25V
C330		AECUB5C102KK	CAPACITOR	1	0.1MF/50V
C340		AECUB5F103ZK	CAPACITOR	1	0.01MF/50V
C10		ECA1VM471B	ELECTROLYTIC CAPACITOR AL	1	470MF/35V
C11		ECEA1CKA100B	ELECTROLYTIC CAPACITOR AL	1	10MF/16V
CN1		AEEMXF01505W	CONNECTOR	1	
CN3			CONNECTOR	1	
CN4		AEEMXF00F04W	CONNECTOR	1	
CX320		AEFOS800MG06	CERAMIC RESONATOR	1	6.8MHz
D180,D181,D182,D183		AESQSML210MT	LED	4	
D10		AESSIN4003E	DIODE,SI	1	
D40,D41,D220,D221		MA196-(TA5)	DIODE,SI	4	
D25		AERZ271NS10D	VARISTOR	1	
IC1		MN101C487DB1	L.S.I	1	
IC220		AN6747B	IC	1	
Q181,Q40,Q220		2SC2412KT146	TRANSISTOR	3	
Q10,Q180		2SD1859TV2Q	TRANSISTOR	2	
R100,R101,R102,R221		AERJ3GSYJ103	RESISTOR	4	10K,1/16W,5%
R40,R41,R42,R43,R44,R45, R46,R47,R48		AERJ3GSYJ104	RESISTOR	9	100K,1/16W,5%
R49		AERJ3GSYJ154	RESISTOR	1	150K,1/16W,5%
R220		AERJ3GSYJ222	RESISTOR	1	2.2K,1/16W,5%
R310		AERJ3GSYJ332	RESISTOR	1	3.3K,1/16W,5%
R330		AERJ3GSYJ333	RESISTOR	1	3.3K,1/16W,5%
		AERJ3GSYJ360	RESISTOR	1	36Ω,1/4W,5%
		RD16ST102J	RESISTOR	1	1K,1/4W,5%
R180,R290		RD16ST103J	RESISTOR	2	10K,1/4W,5%
R340		RD16ST104J	RESISTOR	1	100K,1/4W,5%
R10,R11		RD16ST751J	RESISTOR	2	750Ω,1/4W,5%
RY1		AEGG5G1A12	POWER RELAY	1	
T10		AETP284T0AP	LOW VOLTAGE TRANSFORMER	1	
ZD10		AESZMTZJ5R6B	ZENER DIODE	1	



P. C. B. No.	JPR1	JPR2	JPR3	JPR4	D26, D27
F603L4T00AP	SHORT	SHORT	OPEN	OPEN	×
F603L4T00CP	SHORT	OPEN	OPEN	OPEN	1100VEX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SEG02
SEG03
SEG04
SEG05
SEG06
SEG07
SEG08
SEG09
SEG10
SEG11
DISP110
ACD1658N
COM2
COM1
COM0
S1A
S2A
S3A
S4A
S5A
S6A
S7A
S8A
S9A
S10A
+18V
D180
SML_210
D181
SML_210
D182
SML_210
D183
SML_210
R180
10K
Q180
2SD1859
Q181
2SC2412K
R181
36_C1
+5V
Q40
2SC2412K
D40
MA196
(1SS133T)
R49
150K_C1
0V
JPR5MM
CN6
SS016P_9
P67
P66
P65
P64
P63
P62
P61
KEY1
KEY2
KEY0
KEY3
KEY4
P60
START
RESET
R40 100K_C1
R41 100K_C1
R42 100K_C1
R43 100K_C1
R44 100K_C1
R45 100K_C1
R46 100K_C1
R47 100K_C1
R48 100K_C1
C40 101_C1
C41 101_C1
C42 101_C1
C43 101_C1
C44 101_C1
C45 101_C1
C46 101_C1
C47 101_C1
C48 101_C1
JPR1
JPR5MM
JPR2
JPR5MM
JPR3
OPEN
JPR4
OPEN
P70
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Model for Latin America & Mexico

MODELS	RPH	
	Mexico	Latin America
NN-S540BF/WF		○
NN-540BF/WF	○	○

* This product is based on NN-S540BF/WF APH model, the different parts are listed as followings:
* Any serviceman who has any quiries or order service parts, please contact own area's service company

Ref.No.		Part No.	Part name & Description	Pcs/ Set	Remarks
2		F00074T20BRP	NAME PLATE	1	NN-S540BF
2		F00074T20HRP	NAME PLATE	1	NN-S540WF
2		F00074T70BRP	NAME PLATE	1	NN-540BF
2		F00074T70HRP	NAME PLATE	1	NN-540WF
E1		F603L4T70RP	D.P.CIRCUIT	1	NN-S540BF/WF, NN-540BF/WF
E2		F603Y4T20BAP	MEMBRANE SWITCH(U)	1	NN-S540BF
E2		F603Y4T20HAP	MEMBRANE SWITCH(U)	1	NN-S540WF
E2		F603Y4T70BRP	MEMBRANE SWITCH(U)	1	NN-540BF
E2		F603Y4T70HRP	MEMBRANE SWITCH(U)	1	NN-540WF
P1		F00034T20RP	INSTRUCTION MANUAL	1	NN-S540BF/WF, NN-540BF/WF
P2		F01024T20BAP	PACKING CASE, PAPER	1	NN-S540BF
P2		F01024T20HAP	PACKING CASE, PAPER	1	NN-S540WF
P2		F01024T70BRP	PACKING CASE, PAPER	1	NN-540BF
P2		F01024T70HRP	PACKING CASE, PAPER	1	NN-540WF

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S-4T0
S-4T1
S-4T2
S-4T3
S-4T4
S-4T5
Printed in China